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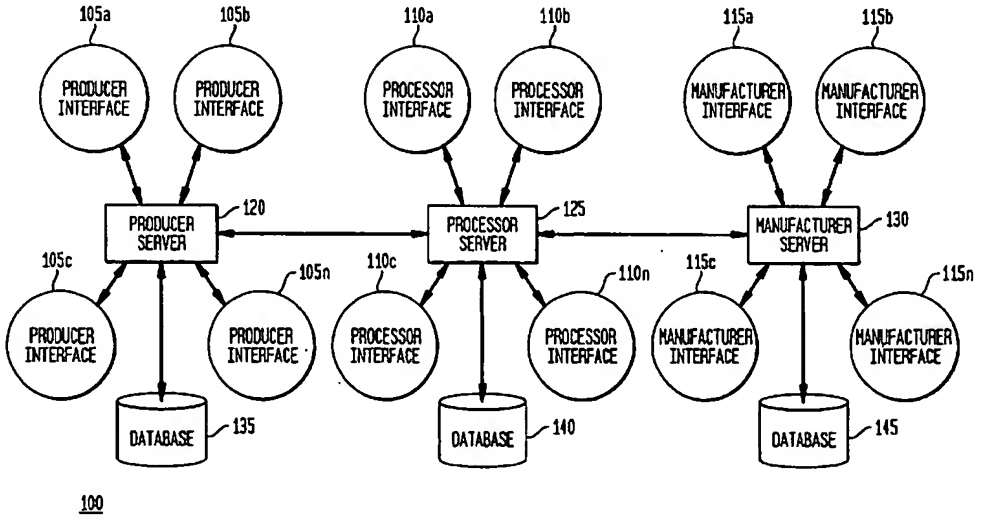
(54) Title: TRANSACTIONAL SUPPLY CHAIN SYSTEM AND METHOD



(57) Abstract: A supply chain system including a first interface operable to allow a first individual to input first information associated with an item and a second interface operable to allow a second individual to input second information associated with a first processing of the item, wherein the first interface and the second interface are coupled to each other via a network connection. Further, a method for tracing an item as the item progresses along a supply chain including associating first information with the item at a stage in the supply chain and associating second information and the first information with another item including the item at another stage in the supply chain.

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TRANSACTIONAL SUPPLY CHAIN SYSTEM AND METHOD

Cross-Reference To Related Applications

The present application is a continuation-in-part application of U.S. Patent Application Serial No. 09/872,846 entitled TRANSACTIONAL SUPPLY CHAIN SYSTEM AND METHOD filed on June 1, 2001.

Field

The present application generally relates to a transactional supply chain system and method and, more particularly, to a system and method for allowing transactions to occur at and between one or more stages along a supply chain while communicating these transactions to one or more participants in a real-time manner and for enabling the participants to trace the history of a product along the supply chain.

Background

Producers, such as farmers, can subscribe to a grower-based system. A grower-based system enables a farmer to input information relating to the farmer's fields and crops. Such information can include what varieties of a crop are being grown, the quantity of the crops being grown, the location of the crops, any inputs applied to the crop and any farm technique to encourage

growth or control weeds and insects. The grower-based system allows the farmer to manage the farm better, for example, to enhance the farm's yield. However, a variety of difficulties still exist for the farmer to gain value for the crop or livestock. These difficulties lie in limited information flow and market signals limited mainly to price and yield, with multiple tiers used in moving a product to market, the farmer is removed from understanding and coordinating inputs with value traits wanted by end-users, coordinating livestock needs with markets, and environmental and food safety compliance/traceability. A farmer, unless contracted, relies primarily on price markets to sell a harvest.

Once a crop is grown and harvested, the crop is stored, then transported to a processor that processes the crop. The processor is also faced with difficulties, including few information links with raw material producers beyond buy and sell relationships, unwanted, undesired or unmet commodity quality traits, inefficiencies due to a multi-tiered structure and inconsistency of supply, lack of information on how desired crops are grown and how to efficiently source the crops, excess inventory caused by lack of real-time data, poor verification and safety traceability which can lead to serious safety issues as seen with Mad Cow

Disease and Starlink issues, loss of product efficiencies due to lack of trait consistent traceable identification, environmental and food safety compliance, and, therefore, makes verifying brand claims difficult and creating new products from known ingredients harder.

Further, individuals or companies within a supply chain traditionally have been transacting business on a one-to-one basis, that is, communicating via telephone, fax, e-mail or in-person requirements, logistics, and terms for a purchase or sale to take place. For example, a producer wanting to do business with a first stage processor transacts business on a one-to-one basis with the first stage processor. In addition, the first stage processor transacts business with producers and manufacturers on a one-to-one basis or through some form of a buying group. The manufacturers then transact business with retailers, wholesalers, distributors, or other end-users who get products into the hands of consumers.

There is a need for a system and method that allows an individual or company within a supply chain to transact and manage business with one or more other individuals or companies within or outside the supply chain from a single web-based environment so that a

collaborative supply chain can be created. Further, what is needed is a system and method for tracing ingredient history of products using the single web-based environment.

Summary Of The Invention

An aspect of the present application provides for a tracking method for a supply chain having at least a first stage and a second stage. The method includes receiving first stage information and second stage information, the first stage information and the second stage information input at the second stage, processing the first stage information and the second stage information so that the first stage information is associated with the second stage information, and storing the first stage information and the second stage information in a database, wherein the stored first stage information and the stored second stage information are at least accessible at the second stage.

Another aspect of the present application provides for a tracking method for a supply chain having at least a first stage and a second stage. The method including receiving first stage agricultural information and second stage agricultural information, the first stage agricultural information and the second stage

agricultural information input at the second stage, processing the first stage agricultural information and the second stage agricultural information so that the first stage agricultural information is associated with the second stage agricultural information, and storing the first stage agricultural information and the second stage agricultural information in a database, wherein the stored first stage agricultural information and the stored second stage agricultural information are at least accessible at the second stage and at least one successive stage in the supply chain, and the first stage is one of a producer stage and a processing stage, and the second stage is one of a processing stage, a storage stage and a manufacturing stage.

A further aspect of the present application provides for a tracking method for a non-linear supply chain. The method includes recording a history of a first item traversing a first path of the non-linear supply chain, and recording a history of a second item traversing a second path of the non-linear supply chain, wherein the first path and the second path are a first output and a second output, respectively, of a multi-output stage in the non-linear supply chain.

A still further aspect of the present application provides for a tracking method for a non-linear supply

chain. The method includes recording a history of a first item traversing a first path of the non-linear supply chain by associating first information applying to a first stage of the non-linear supply chain with the first item, the first path including the first stage and a second stage and the first information including at least one of quantity information, performance information and quality information, and associating second information applying to the second stage with the first item, the second information including at least one of quantity information, performance information and quality information, and recording a history of a second item traversing a second path of the non-linear supply chain by associating the first information applying to the first stage of the non-linear supply chain with the second item, the second path including the first stage a third stage, and associating third information applying to the third stage with the second item, the third information including at least one of quantity information, performance information and quality information, and transmitting the first information, the second information and the third information to at least one individual of a plurality of individuals within or outside the non-linear supply chain, the first information, the second information and the third

information informing the at least one individual about the history of the first item and the second item, wherein the first stage is a multi-output stage having at least outputs.

Brief Description Of The Drawings

Fig. 1 shows an exemplary embodiment of a transactional supply chain system;

Fig. 2 shows an exemplary embodiment of a supply chain;

Fig. 3 shows an exemplary embodiment of a web page viewed by a producer within a supply chain;

Fig. 4 shows an exemplary embodiment of a web page viewed by a producer within a supply chain;

Fig. 5 shows an exemplary embodiment of a web page viewed by a first stage processor within a supply chain;

Fig. 6 shows an exemplary embodiment of a web page viewed by a manufacturer within a supply chain;

Fig. 7 shows an exemplary embodiment for tracing the history of a product;

Fig. 8 shows an exemplary embodiment for tracing the history of a product;

Fig. 9 shows an exemplary embodiment for tracing the history of a product;

Fig. 10 shows an exemplary embodiment for tracing the history of a product;

Fig. 11 shows an exemplary embodiment for tracing the history of a product;

Fig. 12 shows an exemplary embodiment for tracing the history of a product;

Fig. 13 shows an exemplary embodiment for tracing the history of a product;

Fig. 14 shows an exemplary embodiment for tracing the history of a product;

Fig. 15 shows an exemplary embodiment for tracing the history of a product;

Fig. 16 illustrates an exemplary embodiment for tracing the history of a product including minor ingredients;

Fig. 17 illustrates an exemplary embodiment for originating traceability from a plurality of points;

Fig. 18 illustrates a non-linear embodiment of the present application; and

Fig. 19 depicts an exemplary seed tag.

Detailed Description

Fig. 1 illustrates an exemplary embodiment of transactional supply chain system 100. Even though the following exemplary embodiments are explained with reference to the crop wheat and to a supply chain including a producer, such as a farmer, a first stage processor, such as a mill, and a manufacturer, such as a

bakery, the present application can be applied to other items, for example, other varieties of crops, livestock, farm inputs, machinery products, and a host of other products or services used in the business of farming, processing, or distributing of agricultural products and food. In alternative embodiments, additional processors and corresponding processing stages can be incorporated into transactional supply chain system 100. Moreover, the present application is not limited to producers, processors and manufacturers, rather other stages can be included in transactional supply chain system 100 having respective interfaces, such as one or more stages including seed companies, one or more stages providing storage and/or one or stages including companies providing inputs, for example, fertilizers.

The item wheat which is used as an example in the present application has a linear flow through a supply chain. The flow is considered linear because there is a single input and a single output at each stage. As noted above, however, the present application is applicable to other items, such as items that follow a non-linear or multi-linear flow, for instance, corn. A non-linear flow has one or more inputs and one or more outputs at a stage of a supply chain. Fig. 18 illustrates an exemplary non-linear flow of corn along

supply chain 1800. The corn which is grown at farm 1805 from seed 1830 progresses through elevator stage 1810, dry corn mill stage 1815, bakery stage 1820 and general manufacturer stage 1825. As can be seen in Fig. 18, dry corn mill stage 1815 processes the corn into corn flour, corn meal and flaking grits, bakery stage 1820 processes the corn flour and corn meal into dough and then bread, and cereal manufacturer stage 1825 processes the flaking grits into cooked grits and cereal.

Dry corn mill stage 1815 has three outputs, two of which are input to bakery stage 1820 and one of which is input to cereal manufacturer stage 1825, as shown in Fig. 18. Thus, outputs can have different purchasers and end-users. The history of items traversing multiple paths due a non-linear supply chain are recorded in the same manner as will be described below for stages having single inputs and single outputs.

Fig. 2 illustrates an exemplary embodiment of a supply chain 200 including various participants, such as producers 210, storage or elevator facilities 220, first stage processors 230, manufacturers 240 and end-users 250. In the exemplary embodiments of the present application, participants can be either individuals or companies within or outside a supply chain. The participants of the supply chain 200 transact and manage

business in a single web-based environment. As a result, in an exemplary embodiment, information can be shared up and down the supply chain 200 by all participants forming a collaborative supply chain and one or more participants can trace the history of one or more items or other items included therein.

Transactional supply chain system 100 shown in Fig. 1 includes one or more producer interfaces 105a...105n, producer server 120, database 135, one or more processor interfaces 110a...110n, processor server 125, database 140, one or more manufacturer interfaces 115a...115n, manufacturer server 130 and database 145. In an exemplary embodiment, producer interfaces 105a...105n, processor interfaces 110a...110n and manufacturer interfaces 115a...115n are one or more web pages and are coupled to their respective servers via a wireless or land-line Internet connection. Producer server 120, processor server 125 and manufacturer server 130 are coupled together such that an individual using any interface within transactional supply chain system 100 can gain access to any information stored on each database 135, 140, 145, creating a series of private networks based on the collaborative workings of all participants. In an alternative embodiment, individuals are restricted from gaining access to particular stored

information. Transactional supply chain system 100 including three separate servers coupled to respective databases is merely illustrative. Accordingly, more or less servers and databases can be utilized and arranged in a variety of configurations, for example, a single central server coupled to one or more databases can be used in transactional supply chain system 100.

As shown in Fig. 1, producer interfaces 105a...105n are coupled to database 135 via producer server 120. A producer, for example, a farmer, inputs crop information relating to one or more crops, such as wheat, into database 135 via the respective producer interface 105a...105n. In an exemplary embodiment, crop information includes planning data, pre-planting soil preparation data, data indicative of the varieties of wheat being grown, data indicative of the quantity of wheat being grown, data indicative of the location of the wheat, inputs data such as crop chemicals or other treatments, planting data, crop growth and monitoring data, including but not limited to environmental monitoring data, harvesting data, transport data, financial data, and transfer and storage data. Other data can be inputted and stored as well. Further, each farmer can input information such as whether the wheat is

genetically modified, organic and kosher and what pesticides have been used.

A first stage processor, for example, a mill, using one of processor interfaces 110a...110n has access via the Internet to database 135 having stored therein data inputted by one or more farmers. In an alternative embodiment, a manufacturer, such as a bakery, and/or other participants within or outside the supply chain 200 can also access data stored in database 135. In an exemplary embodiment, each processor can only access data stored in database 135 associated with farmers that have granted the processor permission. In a further exemplary embodiment, a farmer can limit which data particular processors can access. For example, a farmer may grow and harvest multiple varieties of wheat and limit a particular processor to accessing information about only one of the varieties or about only some of the fields where crops are grown.

Once the wheat is grown and harvested, the wheat is thereafter transported first to storage, for example, an elevator, and then, upon being purchased, to a processing facility, such as a mill, for processing the wheat to flour. A processor using one of processor interfaces 110a...110n inputs information into database 140 via processor server 125. In an exemplary

embodiment, the information includes planning data, wheat storage data, milling data, such as moisture and protein level, kernel size, flour storing data, packaging data, data indicative of yields in production, finished product storage data and shipping data. Other data can be inputted and stored as well. A manufacturer, such as a bakery, using one of manufacturer interfaces 115a...115n can then access the information about the flour stored in database 140 via the Internet. In an exemplary embodiment, the manufacturer can only access information stored in database 140 associated with processors that have granted the manufacturer permission. In a further exemplary embodiment, a processor can limit which information the manufacturer can access. For example, the processor may only allow a manufacturer to view moisture level data or lot specifications associated with the processing of a particular variety of wheat or wheat recipe from specific storage containers made for their exclusive use. In an alternative embodiment, a producer using one of producer interfaces 105a...105n can also access information stored in database 140.

After the item is processed, for example, after the wheat is processed into flour, the wheat is purchased by a manufacturer, such as a bakery, via one of

manufacturer interfaces 115a...115n to convert the flour into dough and then into a finished product. A manufacturer using one of manufacturer interfaces 115a...115n inputs information into database 145 via manufacturer server 130. In an exemplary embodiment, the information includes performance data, for example, data indicative of whether the finished product met specifications, quality data, for example, how a finished product scores, referred to as bake score data, and yield data. A producer and/or a processor using one of producer interfaces 105a...105n and/or one of processor interfaces 110a...110n, respectively, can then access the information about the flour, dough and/or finished product stored in database 145 via the Internet. In an exemplary embodiment, the producers and/or the processors can only access information stored in database 145 associated with manufacturers that have granted the producers and processors permission. In a further exemplary embodiment, a manufacturer can limit which information the producers and the processors can access. For example, the manufacturers may only allow one or more producers and/or one or more processors to view certain data associated with particular lots of finished products.

Other data can be inputted and stored as well by the bakery regarding the dough and/or finished product(s). The data includes minor ingredients 1610 such as sugar, shortening, salt, yeast, salt improver and ascorbic acid that were added to the dough and/or finished product(s), as shown in Fig. 16. As a result, ingredient data such as minor ingredients 1610 can be tracked. In addition, as described above, the present application applies to the tracking of any agricultural items, or other items that are unrelated to the agricultural industry, that traverse a supply chain. Therefore, ingredients other than minor ingredients 1610 can be tracked, for instance, nutraceutical which are additives to food products that enhance the food products nutritional value.

Transactional supply chain system 100 enables a processor and/or manufacturer to store less wheat and/or flour, respectively, due to the ability of looking down the supply chain to determine, for example, available inventory and types of inventory. Transactional supply chain system 100 also enables a processor and/or manufacturer to demand wheat and flour shortly before fulfilling pending orders.

In an exemplary embodiment, transactional supply chain system 100 also includes an inspection device, not

shown in Figs. 1 and 2. The inspection device can be one or more individuals, such as independent third parties, who manually or through lab analysis perform inspections. The inspection device inspects farmer fields, growing practices, processing and storage facilities and/or associated products. The inspection device can verify that information input into databases 135, 140, 145 is accurate. For example, an inspection will verify that "x wheat" is organic and does not use a particular pesticide. The inspection may be performed by an individual going to the farmer's facility to manually test the wheat, or it might be done from an analysis device at the point of inspection or in the lab. In an exemplary embodiment, the inspection information is stored in a database that can be accessed via producer interfaces 105a...105n, processor interfaces 110a...110n and/or manufacturer interfaces 115a...115n.

In a further exemplary embodiment, a participant, which can be one or more individuals or companies, specifies points of entry along a supply chain where the participant wants feedback/verification information. For example, a participant, such as a bakery, can specifies the desired feedback information such as inspection results at one or more producer fields, moisture and protein level of a certain variety of wheat

or availability of key output traits tied to a specific product claim in a bakery's product, for example, having more bran than other varieties of wheat. Once the feedback information is determined, the bakery can access the information stored, for example, in a verification database. In addition, the participant can specify using, for example, a personalization engine, who in particular the participant wants to have access to specific information. For example, a farmer may only desire particular mills to be capable of viewing information about all or some of the farmer's crop. Each participant has control over who can view what information associated with the respective participant.

Fig. 3 illustrates an exemplary embodiment of a home web page 300 viewable by a producer, such as a farmer, within supply chain 200. The layout and content of the home web page 300 and other web pages associated with the home web page 300 are merely exemplary. The web page 300 enables the farmer to transact and manage many aspects of its business, as well as monitor the needs of other individuals and businesses. Even though the exemplary embodiments are explained with reference to the crop wheat, the present invention can be applied to other varieties of crops, livestock, farm inputs, machinery products, and a host of other products or

services used in the business of farming, processing, or distributing of agricultural products and food.

The home web page 300 provides the farmer with many transactional and managerial abilities. In an exemplary embodiment, by selecting crop inventory tab 310, the farmer can input information about its crops and inventory into, for example, database 135. The farmer has the ability to track the crop information from the time of planting through harvesting by field, by crop, by characteristic of the crop and/or by storage area on the farm, and know where all of this information resides real-time. As a result, the farmer can track by an inventory number the total crop, harvesting, and storage information which can then be passed on to those seeking to buy its crops.

Logistics tab 315 allows for the arrangement and management of any shipping of the farmer's crops to one or more of the farmer's customers or those who merchandise the farmer's crops, for example, to a processing mill, and to a grain elevator. A number of shipping services can be utilized including, but not limited to, truck and rail services. Further, the logistics web page accessed upon clicking the logistics tab 315 allows the farmer to track shipments going out and coming in, for example, by order lot number and

customer. Logistics box 360 which is viewable on the farmer's home web page 300 lists some of the logistics items that are also viewable on the logistics web page. These logistics items include contracts in transit, upcoming contract delivery dates and requests for authorization of particular contracts or they could include estimates from logistics providers for the cost of handling any of the farmer's logistic needs or related services. In an exemplary embodiment, the logistics items viewable in logistics box 360 are the most timely or time sensitive items. For example, a particular contract may need shipping authorization that day or a notice may be posted that a contract is in transit or have a need to be priced that day to make it to market in time to catch the price being offered. All other logistics items are viewable at the logistics web page.

In a further exemplary embodiment, the farmer can input at the logistics web page that the farmer has a certain quantity, and quality, of a product to ship from a particular farm's storage, or from a grain elevator, that has rail or truck capacity to another location. The farmer could then send out the request for a bid or contract with a known shipping service or ship according to an existing contract the farmer has.

Grain elevator tab 320 provides the farmer access to an elevator web page for conducting and managing various aspects of business with one or more grain elevators. Aspects of business that can be conducted with a grain elevator through the elevator web page include ordering shipping to and from one or more grain elevators, monitoring what crop and how much of the farmer's crop is stored at each grain elevator and making payments for storage. Moreover, the farmer has access to information about how the crop is being stored, for example, if certain quality traits are being preserved. Such traits include ensuring that organic crops are stored in organic locations and GMO and non-GMO crops or other identity preserved items are stored into the appropriate respective storage locations. The elevator could also communicate all manner of market making information to the farmer enabling the farmer to instruct the elevator on how to sell or hedge the farmer's crops.

First stage processor tab 325 provides the farmer access to a processor web page for conducting and managing various aspects of business with a first stage processor, such as a flour milling company, who the farmer sells wheat to. In an exemplary embodiment, agreement information is viewable via the first stage

processor tab 325. For example, the first stage processor may have a need for five thousand bushels of a particular variety of wheat and that request is transmitted to one or more producers, the farmer being one. The producer can view that request via one of producer interfaces 105a...105n and respond by entering into a contract, for example, for a thousand bushels of a particular wheat. Specifically, if the farmer can satisfy the first stage processor's needs, the farmer could enter into a contract with the first stage processor through a web site 400 accessed by the first stage processor tab 325. The first stage processor's needs will thereafter adjust to four thousand bushels. Figure 4 discussed below is an exemplary embodiment of the web page 400 viewed by the farmer upon clicking the first stage processor tab 325.

Flour mill B tab 330 provides the farmer access to another processor web page, for example, another first stage processor or a processor at a subsequent stage. In an exemplary embodiment, the functioning of this processor web page is similar to the functioning of the previously discussed processor web page. In a further exemplary embodiment, there is a single processor tab that has a number of different locations or processors that the farmer can sell its product to.

Bank tab 340 gives the farmer access to a bank web page that allows the farmer to attend to its banking needs, for example, those needs arising out of transactions from elsewhere in the transaction supply chain system 100. For example, if the farmer stores its wheat at a grain elevator, it can view at the bank web page accessible through the bank tab 340 the funds used to pay for such storage. Further, if the farmer sells its wheat to the first stage processor, the farmer can view the funds received from the first stage processor. Also, if the farmer owes the first stage processor a payment, the farmer could through the bank web page accessible by clicking on the bank tab 340 put in a request to send the first stage processor the appropriate payment, as well as monitoring that the first stage processor has already received the payment. Similarly, the farmer can have access to other services as well via the home web page 300, such as logistics, purchase of inputs and machinery repairs. Thus, bank tab 340 is merely illustrative of one of the services that can be available to the farmer via, for example, the home web page 300.

Box 355 which is viewable by the farmer on the home web page 300 list hot items and/or action status. In an exemplary embodiment, hot items are business information

that is at the top of a chronological hierarchy sorted by time date --the most time sensitive information. For example, if a certain contract is shipping that day, such information can be included in the appropriate place in the box 355. As a result, the farmer has a quick reference to items on which some action, for example, an acknowledgment, is useful to the farmer itself or others in transactional supply chain system 100. Note that item 3 in box 355 is the same as item 3 in logistics box 360 since it pertains to shipping information for that day which could be considered a hot item.

In an exemplary embodiment, the farmer can view each contract referred to on the home web page 300 or on any link from the home web page 300 by clicking on the hyperlink for that contract. In a further exemplary embodiment, the viewable contracts are images of the entire electronic signature contracts, as well as including summary information about, for example, the kind of crop, the amount of the crop, where the crop is stored and the monetary particulars. For example, the farmer can click on a particular contract # and there may be certain text highlighted for the farmer to confirm its approval or may ask the farmer to provide a missing piece of information if something is not filled

out. Processor home web page 500 and manufacturer home web page 600 shown in Figs. 5 and 6, respectively, also provide the capability to view each referred to contract. This allows the farmer to view the workings of each piece of its business without having to transverse several web sites of each supplier, buyer or provider of services.

In an exemplary embodiment, box 350 includes one or more links. These links include home, hot items, markets, logistics, weather, agricultural ("AG") news, AG links, user profile and privacy. The hot items link would connect the farmer to a hot items web page containing all the items of business that need prompt attention. Hot items are generated using a data sorting functionality that keeps the farmer's business sorted by date. However, any information can be pushed up to the top of the chronological list. In an exemplary embodiment, the farmer can make settings of how it wants its hot items to be arranged so that if the farmer clicks on the hot items link the farmer will see everything that is in box 355 and box 360 plus additional items that may not be as pressing. Hot items can also include a weather service warning, a crash in agricultural prices, a rise in agricultural prices

and/or the sudden need of a customer to the farmer's specific crops.

The markets link in box 350 gives the farmer access to a markets web page having agricultural market information. In an exemplary embodiment, the home web page 300 includes a portion of the agricultural market information, for example, wheat prices box 365 and farm market box 375. In a further exemplary embodiment, the farmer can click on a portion of box 365 and box 375 to provide the farmer with more detailed market information. The agricultural prices are updated real-time or only after a certain predetermined amount of time.

The logistics tab in box 350 gives the farmer access to a logistics web page providing logistical, for example, shipping, information relevant to the farmer's business. The home web page 300 includes a portion of the logistical information in logistics box 360. The logistics information in logistics box 360 includes the most pressing shipping items such as notice that a certain contract is in transit, a contract delivery date, a contract will ship that date and/or a contract needs shipping authorization.

The weather link in box 350 gives the farmer access to a weather web page dedicated to weather information.

In an exemplary embodiment, the weather information is restricted to weather conditions local to the farmer. In alternative embodiments, weather conditions and news for other regions can be accessed and displayed as well. Further, the farmer can request more specific weather information for a particular location through the weather web page. The home web page 300 includes a portion of the weather information available at the weather web page at weather box 370. In an exemplary embodiment, weather box 370 includes a listing of the current and short term weather forecast.

AG news link in box 350 gives the farmer access to an AG news web page dedicated to current and/or past agricultural news and to agricultural news at web sites managed/hosted by others. AG links in box 350 also provides the farmer access to other agricultural-related web sites managed/hosted by other systems. User profile link in box 350 gives the farmer access to a functional web page where the farmer can control the settings for all the various functions provided via home web page 300. User profile box 380 also allows the farmer to access the farmer's account, view and/or change preferences, add and delete tabs, and configure weather. Privacy link in box 350 gives the farmer access to a web page providing information about a privacy policy.

It should be noted that the farmer, the processor, the elevators and the manufacturer each can decide on the layout and informational content of the respective home web page through the use of a personalization engine whose purpose is to create a series of proprietary collaborative networks to enable the effective value enhanced supply chain to benefit each of the participants. There are a variety of personalization engines that are well known in the art which can be used, such as Vantage Point™ for agricultural services. For example, the farmer may decide that it does not want to view certain boxes or links on the home web page 300, but still have access to such information through other channels.

Figure 4 depicts the processor web page 400 accessible through the first stage processor tab 325 of the home web page 300. Web page 400 provides information about business transacted between the farmer and the customer, the first stage processor. Tabs 310, 315, 320, 325, 330 and 340 are the same as those discussed with reference to Fig. 3 and therefore are not discussed again.

Box 415 includes hot items that pertain to the first stage processor's transaction information regarding past, future and ongoing contracts. Hot items

can include an indication that a particular first stage processor contract needs a confirmation, funds have been received from the first stage processor for a particular contract, the first stage processor has sent funds for a particular contract, a contract is to ship that day and/or a particular contract has been signed. Logistics box 420 includes the most pressing logistical information that only pertains to the first stage processor. Note that item 3 in box 415 is the same as item 3 in logistics box 420 since it pertains to logistics information regarding a first stage processor contract that is time sensitive. Other features of the logistic tab 315 and the logistic box 420 were described above with reference to Fig. 3 and are not explained again.

Lab results box 425 includes a listing of the lab results for particular contracts. If the farmer clicked on a contract number in lab results box 425, the farmer could view the lab results for that particular contract. Lab result information can include a variety of things like protein, DNA, pesticide content, moisture, foreign matter, ash, vitamin and mineral make-up varying greatly depending on which crop or livestock item is tested. In an exemplary embodiment, a third party inputs the lab results that are thereafter transmitted and stored in a

database of transactional supply chain system 100 and viewable via the lab results box 425. There can be a number of points in the process where quality checks can be added as a manufacturing process progresses. Such quality checks can be added, for example, at predetermined points along a supply chain and reported to one or more participants.

Needed contracts box 430 sets forth the contractual needs of the first stage processor. Specifically, the farmer views the amount, variety and date the crop is needed by. In an exemplary embodiment, such information is viewable by more than one farmer. For example, the first stage processor may put out a request to all of its producers that it needs 1,000 bushels of a certain wheat by a certain date. The farmer can click on a contract number hyperlink and notify the first stage processor that it has all or some of the desired wheat for sale. The first stage processor can thereafter accept the offer. Once an agreement is entered into, for example, a contract is executed by the respective parties, the needed contract box 430 is updated real time --the needed quantity is reduced accordingly or the contract entry is eliminated.

Box 410 includes a contact first stage processor link, a hot items link, a pending contracts link, needed

contracts link, a first stage processor news link and a sample testing link. The contact first stage processor link allows the farmer to contact the first stage processor for example by providing a phone number and address information and/or having a link to an e-mail application. Hot items link functions as described above with reference to Fig. 3, however, with reference to Fig. 4 only hot items associated with the first stage processor are displayed. Pending contracts link and needed contracts link allow the farmer to view all pending contracts with and needed contracts for the first stage processor. Needed contracts box 430 displays only the portion of the needed contract information that is the most time sensitive. First stage processor news link provides the farmer with any news the first stage processor wishes to disseminate. Sample testing link provides information, such as protein, ash, moisture, foreign matter, GMO, non-GMO, and organic information.

Figure 5 illustrates the home web page 500 of a processor, for example, the first stage processor. The layout and content of the home web page 500 and the web pages associated with the home web page 500 are merely exemplary. The home web page 500 is the web page viewed by the first stage processor when it accesses

transactional supply chain system 100 via one of processor interface 110a...110n. Numerous tabs, boxes and links have similar functions as described with reference to Fig. 3 and therefore are not explained again. These tabs and boxes include logistics tab 525, bank tab 530, wheat prices box 555, user profile box 570 and each of the links in box 540. Note, however, that each of the tabs, boxes and links provide information pertaining to the first stage processor. For example, box 545 includes hot items pertaining to what the first stage processor needs to do on that given day and/or other time sensitive information.

Contracts tab 510 provides the first stage processor information pertaining to all contract information, including pending supplier contracts and all pending customer contracts. Supplier contracts pending box 560 and customer contracts pending box 563 illustrates a portion of the contract information that is the most time sensitive information. When the first stage processor confirms a new contract, the contracts web page accessible via the contract link 510 is updated to include another entry for supplier contracts pending. Further, if the contract is time sensitive it could also be listed in supplier contracts pending box 560.

Suppliers tab 515 provides the first stage processor information regarding all of its suppliers and information pertaining to all transactions from incoming items, such as raw material. Customers tab 520 provides the first stage processor information regarding all of its customers, for example, bakery customers, and information pertaining to all transactions from outgoing products, such as flour. The first stage processor can transact business with its suppliers and customers through the web pages accesses via the suppliers tab 515 and the customers tab 520, respectively. In an exemplary embodiment, the web pages accessible via the customers tab 520 and suppliers tab 515 have their own hot items box for each of the customers and suppliers.

Logistics tab 525 allows the first stage processor to track what is coming in and what is going out, as well as transact any needed business with shipping services. For example, all transactions regarding wheat that has been or will be received and all transactions regarding flour that has been or will be sent out can be tracked. Other information can be tracked as well. Logistics box 550 illustrates the logistics information that is the most time sensitive. In addition, lab tab 535 provides the first stage processor access to lab

test results of items coming in and processed items going out.

Figure 6 illustrates the home web page 600 of a manufacturer, for example, a bakery. The layout and content of the home web page 600 and the web pages associated with the home web page 600 are merely exemplary. The home web page 600 is the web page viewed by the bakery when it accesses transactional supply chain system 100 via one of manufacturer interfaces 115a...115n. Numerous tabs, boxes and links have similar functions as described with reference to Figs. 3, 4 and 5 and therefore are not explained again. These tabs and boxes include logistics tab 615, bank tab 620, hot items box 645, logistics box 650, supplier contracts pending box 655, customer contracts pending 660, user profile box 665 and home, hot items, markets, logistics, user profile and privacy links in box 640. Note, however, that each of the tabs, boxes and links provide information pertaining to the bakery. For example, hot items box 645 includes hot items relating to the bakery's business that are time sensitive.

First stage processor tab 610 provides the manufacturer, the bakery, access to a web page including information about the first stage processor which is supplying flour to the bakery. Specifically, the first

stage processor web page includes all business information regarding the first stage processor, such as all the pending and executed transactions that are involved in buying flour from the first stage processor. For example, information stating that the bakery expects to receive a certain quantity of a certain type of flour on a particular date. Further, the bakery can request that it needs, for example, five thousand pounds of rye flour by a certain date and the first stage processor could thereafter enter into an electronic contract with the bakery to supply the flour.

Customer links 625, 630, 635 provide the bakery access to respective web pages for individual customers. The bakery provides to its customers, for example, bread products such as rolls and frozen dough.

Flour status link in box 640 provides the bakery with access to a web page having test results and quality reports for incoming flour that was sent to the bakery by its various suppliers. In other words, the web page could provide a quality snap shot of all the flour the bakery has in its inventory. Quality results link in box 640 provides the bakery with access to a web page having quality and test results of outgoing baked products. Yield results by lot shows relative performance for traceable flour and provides the bakery

access to a web page for inputting information concerning how much product the manufacturer got from a given shipment of flour. For example, the bakery made x number of rolls out of x pounds of flour. The bakery can also design specific products with specific label claims knowing the information set forth above through information acquired by the farmer and the first stage processor. Such web pages allow the bakery or any other participant to track a lot of wheat completely from a retailer to the field of a farmer in the event of a food safety question, thereby enhancing the ability of the bakery to service its customers with more product offerings and to step up the ability to comply with growing food safety regulations based on traceability on the federal and state level.

In an exemplary embodiment, an ingredient history of a product is stored in one or more databases of transactional supply chain system 100 which allows tracing and verification of at least all product ingredients all the way back to one or more seed companies, or further if applicable. The database can be either database 135, database 140 or database 145, or a combination thereof. Other databases not shown in the drawings can be utilized as well. In a further exemplary embodiment, information is transmitted back to

an originator of an ingredient, for example, a company providing seeds, informing the seeding company of the performance of its seeds at one or more points along a supply chain.

Figures 7 through 15 illustrate an exemplary embodiment for tracing an item as the item develops into another item and progresses along a supply chain. Like reference numerals designate like data in the figures. In the exemplary embodiment, a supply chain including a farm, a mill and a bakery and a product such as bread is described. The components of this supply chain and the item, however, are merely illustrative.

Figures 7 through 9 illustrate the tracing of the ingredients used in a particular bread product starting at the farm stage 700 of a supply chain. As previously noted, the tracing of ingredients of products can begin before a producer, such as from a seeding stage. The tracing of the bread product ingredients begins when a farmer inputs information about the wheat used in the bread product, for example, field and planting data 705, into database 135 via the respective producer interface 105a...105n, as shown in Fig. 7. Field and planting data 705, as well as storage information if applicable, is then audited, for example, by a third party 710 and audit results data 810, shown in Fig. 8, is generated

and stored in database 135. The grain is thereafter harvested and marked as a specific inventory lot. Information about the harvested grain, for example, quantity and quality information, is input by the farmer into database 135 and stored as producer inventory lot #A data 805 shown in Fig. 8. Audit results data 810 and producer inventory lot #A data 805 are stored in database 135 either together as a single record or as multiple records in association with each other. A lab test on the grain 815 is performed and test results data 905, shown in Fig. 9, is generated and stored in database 135. As can be seen in Fig. 9, producer inventory lot #A data 805, audit results data 810 and test results data 905 are stored in database 135 either together as a single record or as multiple records in association with each other. The grain, referred to in Fig. 9 as available inventory 910, is then offered for sale in transactional supply chain system 100.

Figures 10 through 12 illustrate the tracing of the wheat and flour used in the particular bread product at the mill stage 1000 of the supply chain. Available inventory 910 or a portion thereof is purchased by a mill, as shown in Fig. 10, for example, via one of processor interfaces 110a...110n. Information about the purchased grain, for example, the location of the stored

grain, the quantity of the grain and the quality of the grain, is generated and stored in database 140 as grain inventory bin #1 data 1005. Further, PI lot #A data 1010 is generated which includes all known information about the available inventory 910 purchased from the farmer. In an exemplary embodiment, this information includes producer inventory lot #A data 805, audit results data 810 and test results data 905. PI lot #A data 1010 and grain inventory bin #1 data 1005 are stored in database 140 either together as a single record or as multiple records in association with each other. An experimental mill test 1015 is then performed and mill test results data is generated and stored in database 140.

Next, the mill creates a wheat mix in part from the grain of available inventory 910 and generates and stores wheat mix #1 data 1105 in database 140, as shown in Fig. 11. Wheat mix #1 data 1105 includes, for example, quantity information and quality information. Further, grain bin #1 data 1005, shown in Fig. 11 under wheat mix #1 data 1105, also includes mill tests results data from experimental mill test 1015. Wheat mix #1 data 1105, grain bin #1 data 1005 and PI lot #A data 1010 are stored in database 140 either as a single record or as multiple records in association with each

other. An additional experimental mill test 1115 is thereafter performed on the wheat mix and mill test results data is generated and stored in database 140. Specifically, wheat mix #1 data 1105, shown in Fig. 12 under mill flour lot A data 1205, also includes the mill test results data. The mill next processes the wheat mix into flour and generates information about the flour as mill flour lot A data 1205, as shown in Fig. 12. Mill flour lot A data 1205 includes, for example, quantity information and quality information. Mill flour lot A data 1205, wheat mix #1 data 1105, grain inventory bin #1 data 1005 and PI lot #A data 1010 are stored in database 140 either as a single record or as multiple records in association with each other. A flour analysis 1215 is then performed on the flour processed from the specific wheat mix and flour analysis data is generated and stored in database 140. Thereafter, a performance report 1220 is generated, for example, by the mill which can include an ability to compare all flour lots created at the mill. In an exemplary embodiment, the performance report 1220 includes the flour analysis data.

A mill yield formula could also be used by the mill to determine the conversion efficiency of grain to flour

by grain lot. The following industry standard conversion formula is used:

2.3 bu. @ 60lb. test weight = yield of 100 lbs. of flour (1)

Other formulas can obviously be used as well in place of or in conjunction with the above formula.

Figures 13 through 15 illustrate the tracing of the flour, dough and finished bread product at a bakery stage 1300 of the supply chain. A bakery purchases the flour from the mill, receives performance report 1220 and stores the flour in a flour lot bin. Flour lot bin #1 data 1305 is generated which includes, for example, information about the location and conditions of the bin the flour is stored in, the quantity of the flour and the quality of the flour, as shown in Fig. 13. Flour lot bin #1 data 1305 is stored in database 145 along with data about the history of the flour. Specifically, flour lot bin #1 data 1305, mill flour lot A data 1205, wheat mix #1 data 1105, grain bin #1 data 1005 and PI lot #A data 1010 are stored in database 145 either as a single record or as multiple records in association with each other.

Using flour from the flour lot bin associated with flour lot bin #1 data 1305, the bakery creates dough and generates dough #A data 1405, as shown in Fig. 14. Dough #A data 1405 includes, for example, quantity information and quality information. Dough #A data 1405, flour lot bin #1 data 1305, mill flour lot A data 1205, wheat mix #1 data 1105, grain bin #1 data 1005 and PI lot #A data 1010 are stored in database 145 either as a single record or as multiple records in association with each other. Batch test 1415 is thereafter conducted on the dough corresponding with dough #A 1405 and batch test data is generated and stored in database 140. Specifically, dough #A data 1405, shown in Fig. 15 under finish product #1 data 1505, also includes the batch test data.

Further, in the event minor ingredients 1610 are added to the dough and/or finished product(s), these minor ingredients are tracked, as shown in Fig. 16, in the same manner as other items are tracked along a supply chain as described herein with reference to Figs. 7 through 15.

The dough is used by the bakery to create bread and the bakery generates finish product #1 data 1505 corresponding to the produced bread, as shown in Fig. 15. Finish product #1 data 1505 includes, for example,

quantity information and quality information. Finish product #1 data 1505, dough #A data 1405, flour lot bin #1 data 1305 mill flour lot A data 1205, wheat mix #1 data 1105, grain bin #1 data 1005 and PI lot #A data 1010 are stored in database 145 either as a single record or as multiple records in association with each other. Performance, for example, quantity of loaves, texture and taste, are then scored and data indicative of the performance is stored in database 145 as bake score data 1515 and can be compared with other units of production.

Even though Figs. 7 through 15 were described with reference to storing information in database 135, database 140 and database 145, other databases or memory storage devices can used as well. Further, the present application is not limited to the database architecture shown in Fig. 1. For example, a single database or cluster of databases networked together can be accesses by each of the interfaces shown in Fig. 1.

As a result of tracing the development of an item, such as a bread product, as described above with reference to Figs. 7 through 15, information about every item, such as ingredients, included within the item can be verified. Information is continuously and progressively stored in one or more databases along an

entire supply chain that allows one to verify a brand claim of a particular finished product or lot of finished products, such as XYZ product is 100 percent organic.

Fig. 17 illustrates a further exemplary embodiment of the present application. As shown in Fig. 17, traceability of an item or items can originate from a plurality of stages along supply chain 1700, for example, from point 1725a, point 1725b, point 1725c and/or point 1725d. The stages along supply chain 1700 include farm 1705, elevator, 1710, mill 1715 and bakery 1720. These stages have the same roles as described above with reference to Figs. 1 through 16 and are therefore not described again. Traceability can be originated, however, from each stage in supply chain system 1700. Traceability originates at a respective stage by that stage entering as much information as it has or can determine, for instance, into transactional supply chain system 100, regarding the history of the item prior to the item's arrival at the stage.

Farm 1705 plants seed 1730, and grows and harvests wheat from seed 1730. Seed 1730 may have a certified tag number 1735. Fig. 19 illustrates an exemplary seed tag 1905 including certified tag number 1735. Seed tag 1905 also includes information such as the seed name,

information about the seed company, such as name, address and telephone number, a lot number, purity information, inert matter information, weed seed information, approximate number of seeds per pound, germination information, origin information and date and weight information. More or less information can be included in seed tag 1905. Farm 1705 can originate traceability at point 1725a by inputting information, including information from seed tag 1905 and/or other information (collectively referred to herein as "crop information") into, for example, transactional supply chain system 100 described above with reference to Fig. 1. Farm 1705 can acquire information about the crop variety, where the crop was grown and who was the grower from a source other than a seed tag.

In the event farm 1705 does not input crop information into transactional supply chain system 100, elevator 1710 can originate traceability at point 1725b along supply chain 1700. Elevator 1710 originates traceability at point 1725b by inputting as much information as elevator 1710 has or can determine about the history of the item prior to its arrival at their facility. For example, elevator 1710 can input crop information into transactional supply chain system 100 regarding the history of the stored grain. After the

crop information has been entered into transactional supply chain system 100, the information will be searchable by participants like described above with reference to Figs. 3 through 6. Elevator 1710 can input other information pertaining to that stage of supply chain 1710 such as storage data, packaging data and shipping data.

Similarly, if farm 1705 and/or elevator 1710 do not input crop information and storage related information, respectively, mill 1715 can originate traceability at point 1725c. Mill 1715 originates traceability at point 1725c by inputting as much information as mill 1715 has or can determine about the history of the item prior to its arrival at their facility. For example, mill 1715 can input crop information and storage related information into transactional supply chain system 100. Mill 1725 can also input information pertaining to that stage of supply chain 1710 such as planning data, storage data, milling data, packaging data, data indicative of yields in production, finished product storage data and shipping data. Thus, the history of the grain is recorded and can be retrieved and viewed.

Lastly, if farm 1705, elevator 1710 and/or mill 1715 do not input crop information, storage related information and processing information, respectively,

bakery 1720 can originate traceability at point 1725d. Bakery 1720 originates traceability at point 1725d by inputting as much information as bakery 1720 has or can determine about the history of the item prior to its arrival at their facility. For instance, bakery 1720 can input crop information, storage related information and processing information into transactional supply chain system 100. Bakery 1720 can also input information pertaining to that stage of supply chain 1710 such as planning data, storage data, milling data, packaging data, data indicative of yields in production, finished product storage data and shipping data. Accordingly, the history of the dough and bread is recorded and can be retrieved and viewed. In an exemplary embodiment, the information input by farm 1705, elevator 1710, mill 1715 and/or bakery 1720 is utilized in the same manner as described above with reference to Figs. 7 through 16.

Farm 1705, elevator 1710, mill 1715 and bakery 1720 may not be authorized to input information relative to their respective stage, for instance, because they are not participants in transactional supply chain system 100 or they may not input information pertaining to their respective stages because they are not acting diligently.

As a result of allowing one or more participants along a supply chain to originate traceability, participants up the supply chain are not dependent on participants, or non-participants, below the respective participant inputting information into exemplary system 100 about the history of the ingredient and/or product.

The embodiments described above are illustrative examples of the present invention and it should not be construed that the present invention is limited to these particular embodiments. Various changes and modifications may be effected by one skilled in the art without departing from the spirit or scope of the invention as defined in the appended claims.

We claim:

1. A tracking method for a supply chain having at least a first stage and a second stage, the method comprising:

receiving first stage information and second stage information, the first stage information and the second stage information input at the second stage;

processing the first stage information and the second stage information so that the first stage information is associated with the second stage information; and

storing the first stage information and the second stage information in a database, wherein

the stored first stage information and the stored second stage information are at least accessible at the second stage.

2. The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 1, wherein

the stored first stage information and the stored second stage information are accessible at the second stage and at least one successive stage in the supply chain.

3. The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 1, wherein

the first stage is a producer stage and the second stage is a processing stage.

4. The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 3, wherein

the first stage information includes at least one of producer name, producer address, producer phone number and inventory information.

5. The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 4, wherein

the inventory information includes at least one of crop type, crop variety, crop moisture, protein and test weight.

6. The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 1, wherein

the second stage information includes at least one of planning data, storage data, milling data, packaging

data, data indicative of yields in production, finished product storage data and shipping data.

7. The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 1, wherein

the first stage information is input at the second stage because the first stage is a non-participant in a transactional supply chain system and the second stage is a participant in the transactional supply chain system.

8. A tracking method for a supply chain having at least a first stage and a second stage, the method comprising:

receiving first stage agricultural information and second stage agricultural information, the first stage agricultural information and the second stage agricultural information input at the second stage;

processing the first stage agricultural information and the second stage agricultural information so that the first stage agricultural information is associated with the second stage agricultural information; and

storing the first stage agricultural information and the second stage agricultural information in a database, wherein

the stored first stage agricultural information and the stored second stage agricultural information are at least accessible at the second stage and at least one successive stage in the supply chain,

and the first stage is one of a producer stage and a processing stage, and the second stage is one of a processing stage, a storage stage and a manufacturing stage.

9. A tracking method for a non-linear supply chain, the method comprising:

recording a history of a first item traversing a first path of the non-linear supply chain; and

recording a history of a second item traversing a second path of the non-linear supply chain, wherein

the first path and the second path are a first output and a second output, respectively, of a multi-output stage in the non-linear supply chain.

10. The tracking method for a non-linear supply chain as set forth in claim 9, wherein

the first path includes at least one multi-output stage, the first item resulting from one of a plurality of outputs of the multi-output stage along the first path.

11. The tracking method for a non-linear supply chain as set forth in claim 9, wherein

the second path includes at least one multi-output stage, the second item resulting from one of a plurality of outputs of the multi-output stage along the second path.

12. The tracking method for a non-linear supply chain as set forth in claim 9, wherein recording the history of the first item includes

associating first information applying to a stage of the non-linear supply chain with the first item, the first information including at least one of quantity information, performance information and quality information, and

associating second information applying to another stage with the first item, the second information including at least one of quantity information, performance information and quality information.

13. The tracking method for a non-linear supply chain as set forth in claim 12, wherein

the other stage is the multi-output stage.

14. The tracking method for a non-linear supply chain as set forth in claim 9, wherein recording the history of the second item includes

associating first information applying to a stage of the non-linear supply chain with the second item, the first information including at least one of quantity information, performance information and quality information, and

associating second information applying to another stage with the second item, the second information including at least one of quantity information, performance information and quality information.

15. The tracking method for a non-linear supply chain as set forth in claim 9, wherein recording the history of the first item includes

associating information applying to a stage of the non-linear supply chain with the first item, the information including at least one of quantity information, performance information and quality information and, wherein

the recording of the history of the second item includes

associating the information applying to the stage of the non-linear supply chain with the second item.

16. The tracking method for a non-linear supply chain as set forth in claim 9, wherein recording the history of the first item includes

associating first information applying to a stage of the non-linear supply chain with the first item, the first information including at least one of quantity information, performance information and quality information and

associating second information applying to another stage with the first item, the second information including at least one of quantity information, performance information and quality information, and wherein

the recording of the history of the second item includes

associating the first information applying to the stage of the non-linear supply chain with the second item and

associating the second information applying to the other stage with the second item.

17. The tracking method for a non-linear supply chain as set forth in claim 12, further comprising:

transmitting the first information and the second information to at least one individual of a plurality of individuals within or outside the non-linear supply chain, the first information and the second information informing the at least one individual about the history of at least the first item.

18. A tracking method for a non-linear supply chain, the method comprising:

recording a history of a first item traversing a first path of the non-linear supply chain by associating first information applying to a first stage of the non-linear supply chain with the first item, the first path including the first stage and a second stage and the first information including at least one of quantity information, performance information and quality information, and

associating second information applying to the second stage with the first item, the second information including at least one of quantity information, performance information and quality information; and

recording a history of a second item traversing a second path of the non-linear supply chain by

associating the first information applying to the first stage of the non-linear supply chain with the second item, the second path including the first stage a third stage, and

associating third information applying to the third stage with the second item, the third information including at least one of quantity information, performance information and quality information; and

transmitting the first information, the second information and the third information to at least one individual of a plurality of individuals within or outside the non-linear supply chain, the first information, the second information and the third information informing the at least one individual about the history of the first item and the second item, wherein

the first stage is a multi-output stage having at least outputs.

FIG. 1

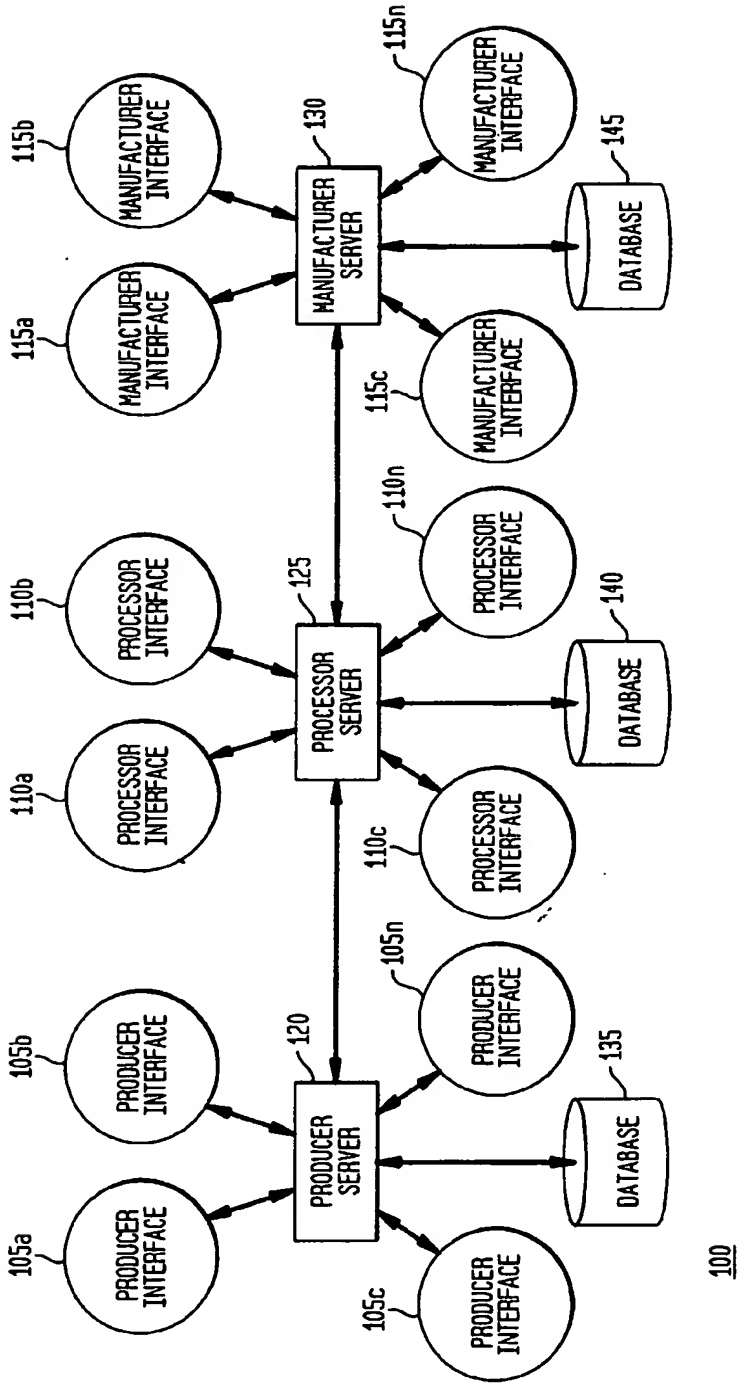
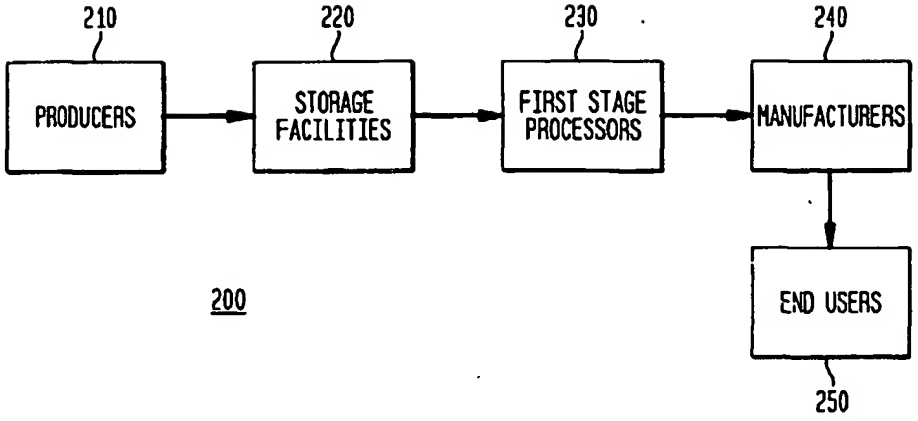

PRODUCER INTERFACE
105a
PRODUCER INTERFACE
105b
PRODUCER INTERFACE
105c
PRODUCER INTERFACE
105n
PRODUCER SERVER
120
DATABASE
135
PROCESSOR INTERFACE
110a
PROCESSOR INTERFACE
110b
PROCESSOR INTERFACE
110c
PROCESSOR INTERFACE
110n
PROCESSOR SERVER
125
DATABASE
140
MANUFACTURER INTERFACE
115a
MANUFACTURER INTERFACE
115b
MANUFACTURER INTERFACE
115c
MANUFACTURER INTERFACE
115n
MANUFACTURER SERVER
130
DATABASE
145
100

FIG. 2


210
220
230
240
PRODUCERS
STORAGE FACILITIES
FIRST STAGE PROCESSORS
MANUFACTURERS
END USERS
250
200

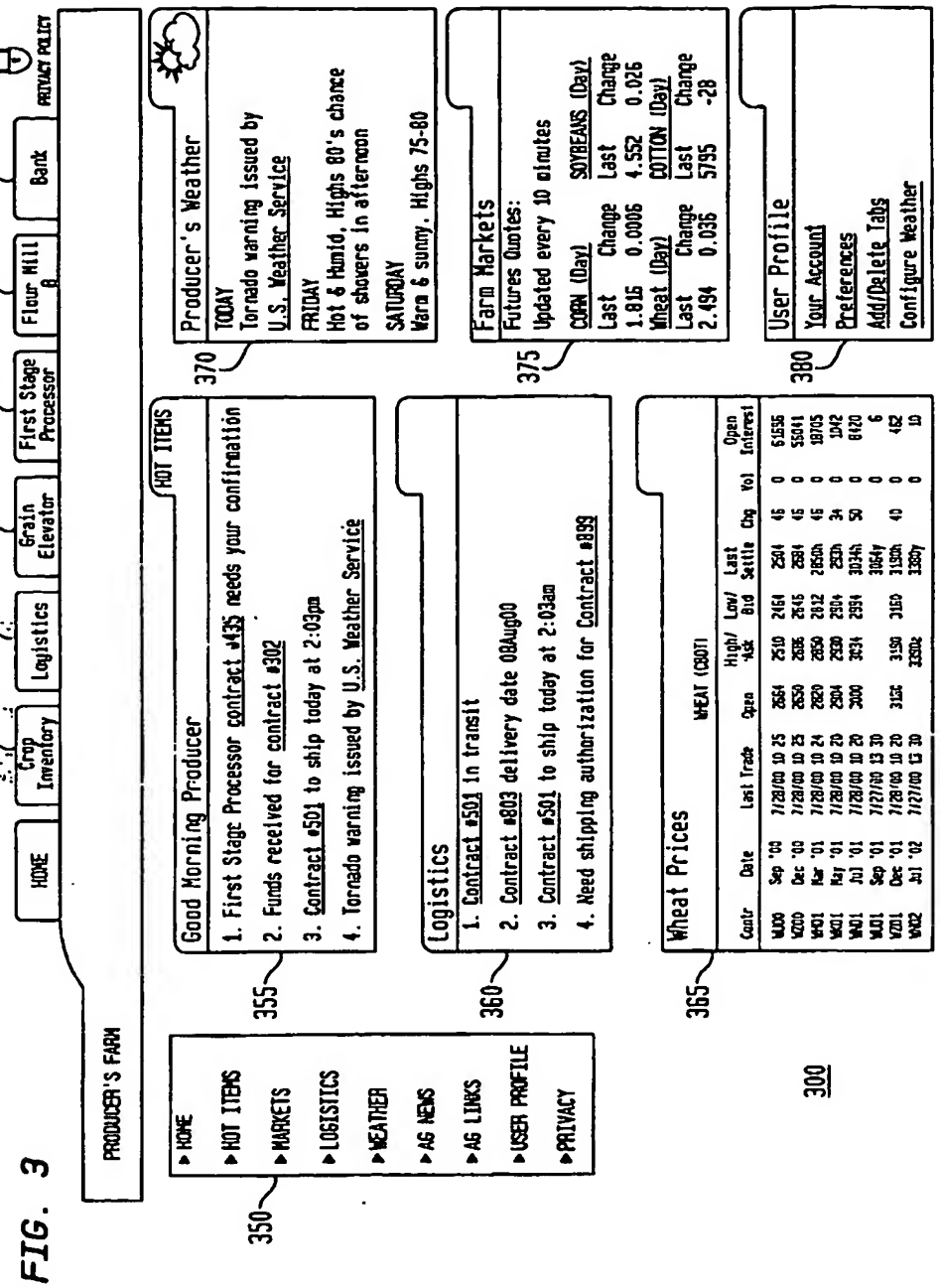
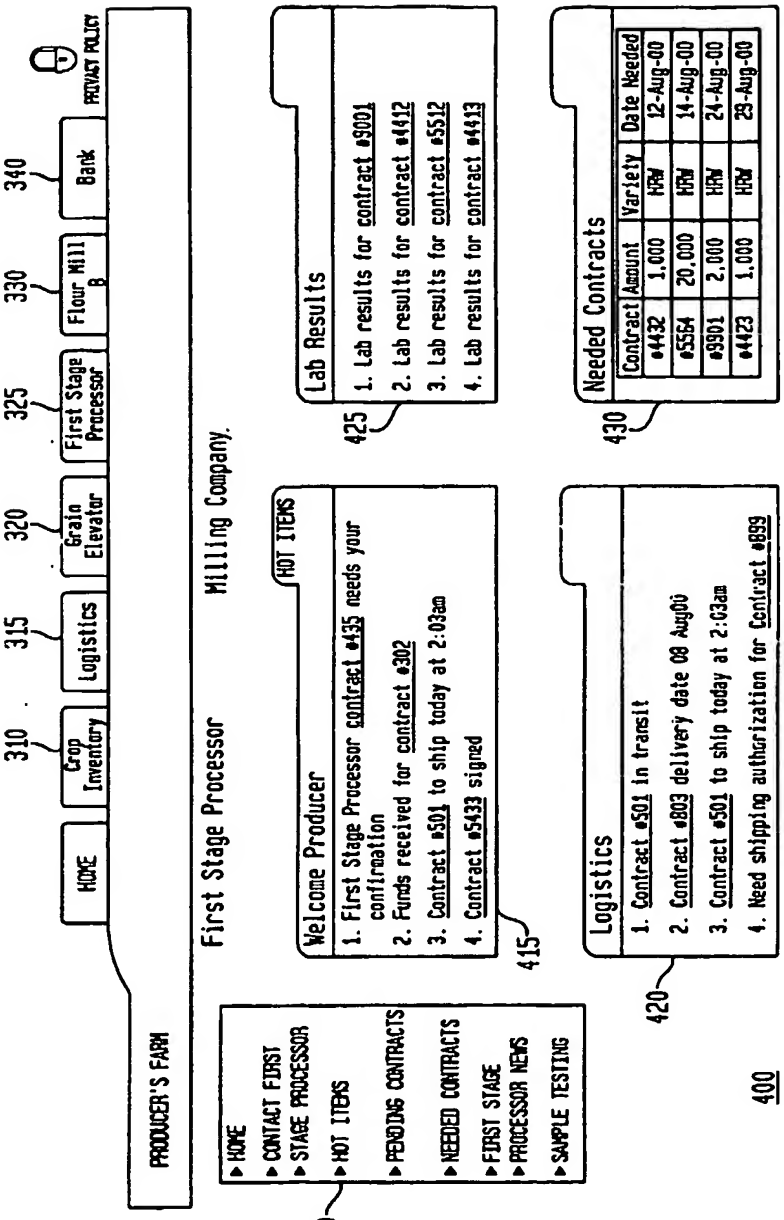

PRODUCER'S FARM
HOME
Crop Inventory
Logistics
Grain Elevator
First Stage Processor
Flour Mill A
Bank
PRIVACY POLICY
310
315
320
325
330
340
HOME
HOT ITEMS
MARKETS
LOGISTICS
WEATHER
AG NEWS
AG LINKS
USER PROFILE
PRIVACY
350
HOT ITEMS
Good Morning Producer
1. First Stage Processor contract #435 needs your confirmation
2. Funds received for contract #302
3. Contract #501 to ship today at 2:03pm
4. Tornado warning issued by U.S. Weather Service
355
Logistics
1. Contract #501 in transit
2. Contract #803 delivery date 08Aug00
3. Contract #501 to ship today at 2:03am
4. Need shipping authorization for Contract #899
360
Wheat Prices
WHEAT (CBOT)
Contr Date Last Trade Open High/ Ask Low/ Bid Last Settle Chg Vol Open Interest
WU00 Sep '00 7/28/00 10 25 2564 2510 2464 2504 46 0 51535
WZ00 Dec '00 7/28/00 10 25 2650 2635 2615 2584 46 0 53041
WH01 Mar '01 7/28/00 10 24 2820 2850 2812 2850h 46 0 19705
WK01 May '01 7/28/00 10 20 2904 2930 2904 2931h 34 0 1042
WN01 Jul '01 7/28/00 10 20 3000 3034 2994 3034h 50 0 8420
WU01 Sep '01 7/27/00 13 30 3134 3164y 0 6
WZ01 Dec '01 7/28/00 10 20 3156 3190 3169 3190h 40 0 482
WH02 Jul '02 7/27/00 13 30 3330z 3380y 0 10
365
Producer's Weather
TODAY
Tornado warning issued by U.S. Weather Service
FRIDAY
Hot & Humid, Highs 80's chance of showers in afternoon
SATURDAY
Warm & sunny. Highs 75-80
370
Farm Markets
Futures Quotes:
Updated every 10 minutes
CORN (Day) SOYBEANS (Day)
Last Change Last Change
1.815 0.0006 4.552 0.026
Wheat (Day) COTTON (Day)
Last Change Last Change
2.494 0.036 5795 -28
375
User Profile
Your Account
Preferences
Add/Delete Tabs
Configure Weather
380
300

FIG. 3

FIG. 4


PRODUCER'S FARM
First Stage Processor Milling Company.
HOME
Crop Inventory
Logistics
Grain Elevator
First Stage Processor
Flour Mill B
Bank
PRIVACY POLICY
310
315
320
325
330
340
HOME
CONTACT FIRST STAGE PROCESSOR
HOT ITEMS
PENDING CONTRACTS
NEEDED CONTRACTS
FIRST STAGE
PROCESSOR NEWS
SAMPLE TESTING
410
Welcome Producer
HOT ITEMS
1. First Stage Processor contract #435 needs your confirmation
2. Funds received for contract #302
3. Contract #501 to ship today at 2:03am
4. Contract #5433 signed
415
Logistics
1. Contract #501 in transit
2. Contract #803 delivery date 08 Aug00
3. Contract #501 to ship today at 2:03am
4. Need shipping authorization for Contract #899
420
Lab Results
1. Lab results for contract #9001
2. Lab results for contract #4412
3. Lab results for contract #5512
4. Lab results for contract #4413
425
Needed Contracts
Contract Amount Variety Date Needed
#4432 1,000 HRW 12-Aug-00
#5564 20,000 HRW 14-Aug-00
#9901 2,000 HRW 24-Aug-00
#4423 1,000 HRW 29-Aug-00
430
400

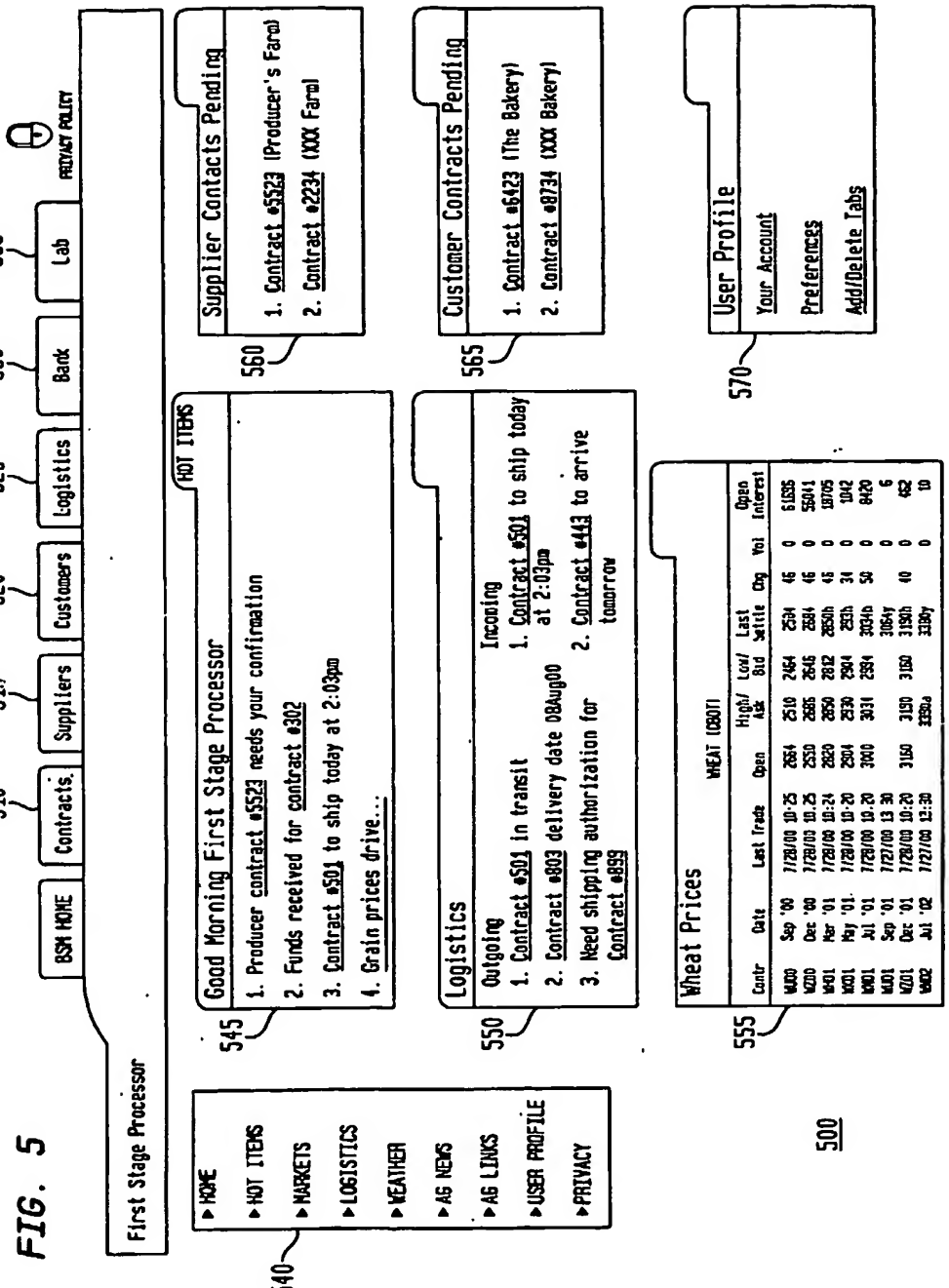

First Stage Processor
BSM HOME
Contracts
Suppliers
Customers
Logistics
Bank
Lab
PRIVACY POLICY
510
515
520
525
530
535
HOT ITEMS
Good Morning First Stage Processor
1. Producer contract #5523 needs your confirmation
2. Funds received for contract #302
3. Contract #501 to ship today at 2:03pm
4. Grain prices drive...
545
Supplier Contacts Pending
1. Contract #5523 (Producer's Farm)
2. Contract #2234 (XXX Farm)
560
Logistics
Outgoing
1. Contract #501 in transit
2. Contract #803 delivery date 08Aug00
3. Need shipping authorization for Contract #899
Incoming
1. Contract #501 to ship today at 2:03pm
2. Contract #443 to arrive tomorrow
550
Customer Contracts Pending
1. Contract #6423 (The Bakery)
2. Contract #8734 (XXX Bakery)
565
User Profile
Your Account
Preferences
Add/Delete Tabs
570
Wheat Prices
WHEAT (CBOT)
555
Contr
Date
Last Trade
Open
High/ Ask
Low/ Bid
Last Settle
Chg
Vol
Open Interest
WZ00 Sep '00 7/28/00 10:25 2684 2510 2464 2524 46 0 51335
WZ00 Dec '00 7/28/00 10:25 2550 2685 2646 2684 46 0 55041
WH01 Mar '01 7/28/00 10:24 2820 2850 2812 2850h 46 0 19705
WK01 May '01 7/28/00 10:20 2904 2930 2904 2934 34 0 1042
WN01 Jul '01 7/28/00 10:20 3000 3031 2984 3034b 50 0 8420
WU01 Sep '01 7/27/00 13:30 3064y 0 6
WZ01 Dec '01 7/28/00 10:20 3150 3150 3150 3150h 40 0 482
WH02 Jul '02 7/27/00 12:30 3330a 3330y 0 10
500

FIG. 5

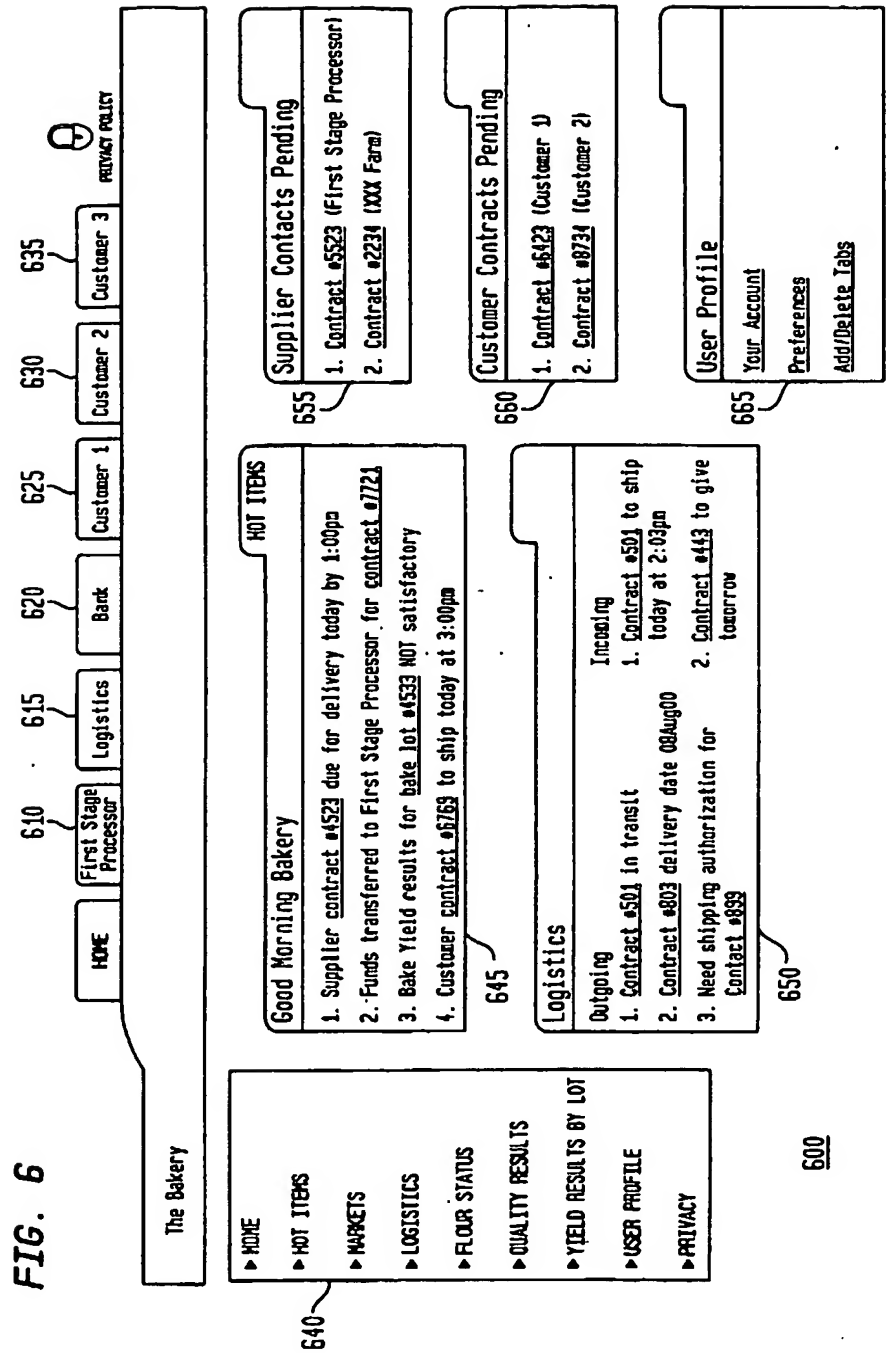

The Bakery
HOME
First Stage Processor
Logistics
Bank
Customer 1
Customer 2
Customer 3
PRIVACY POLICY
610
615
620
625
630
635
HOT ITEMS
Good Morning Bakery
1. Supplier contract #4523 due for delivery today by 1:00pm
2. Funds transferred to First Stage Processor for contract #7721
3. Bake Yield results for bake lot #4533 NOT satisfactory
4. Customer contract #6769 to ship today at 3:00pm
645
Logistics
Outgoing
1. Contract #501 in transit
2. Contract #803 delivery date 08Aug00
3. Need shipping authorization for Contact #889
Incoming
1. Contract #591 to ship today at 2:03pm
2. Contract #443 to give tomorrow
650
Supplier Contacts Pending
1. Contract #5523 (First Stage Processor)
2. Contract #2234 (XXX Farm)
655
Customer Contracts Pending
1. Contract #6423 (Customer 1)
2. Contract #8734 (Customer 2)
660
User Profile
Your Account
Preferences
Add/Delete Tabs
665
▶HOME
▶HOT ITEMS
▶MARKETS
▶LOGISTICS
▶FLOUR STATUS
▶QUALITY RESULTS
▶YIELD RESULTS BY LOT
▶USER PROFILE
▶PRIVACY
640
600

FIG. 6

FIG. 7

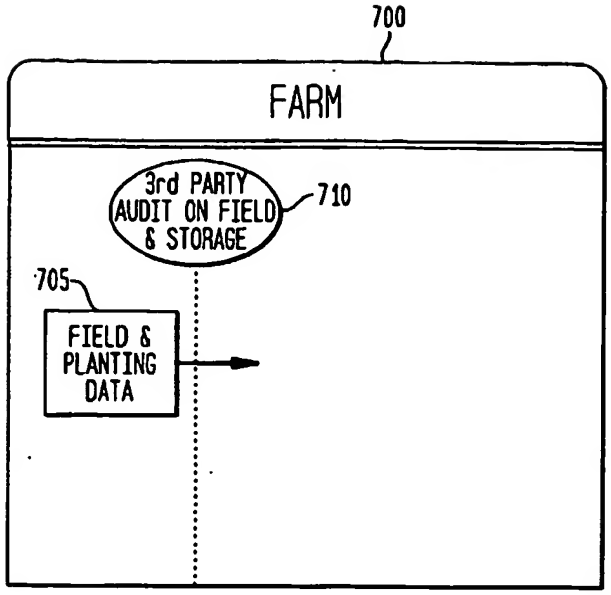

700
FARM
3rd PARTY AUDIT ON FIELD & STORAGE
710
705
FIELD & PLANTING DATA

FIG. 8

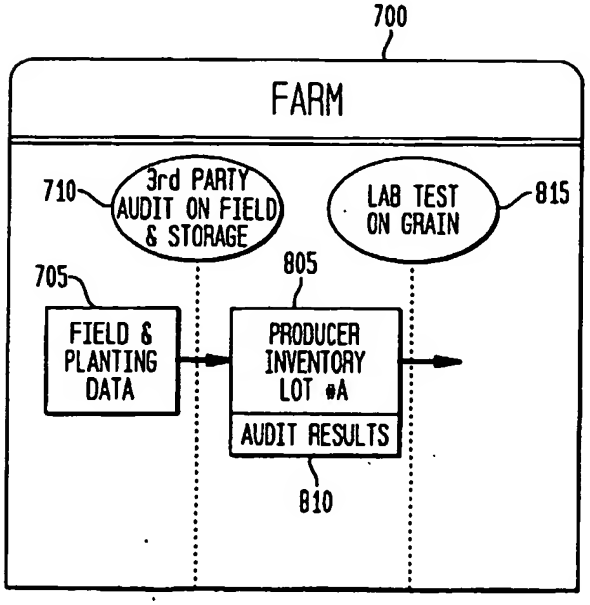

700
FARM
710
3rd PARTY AUDIT ON FIELD & STORAGE
LAB TEST ON GRAIN
815
705
805
FIELD & PLANTING DATA
PRODUCER INVENTORY LOT #A
AUDIT RESULTS
810

FIG. 9

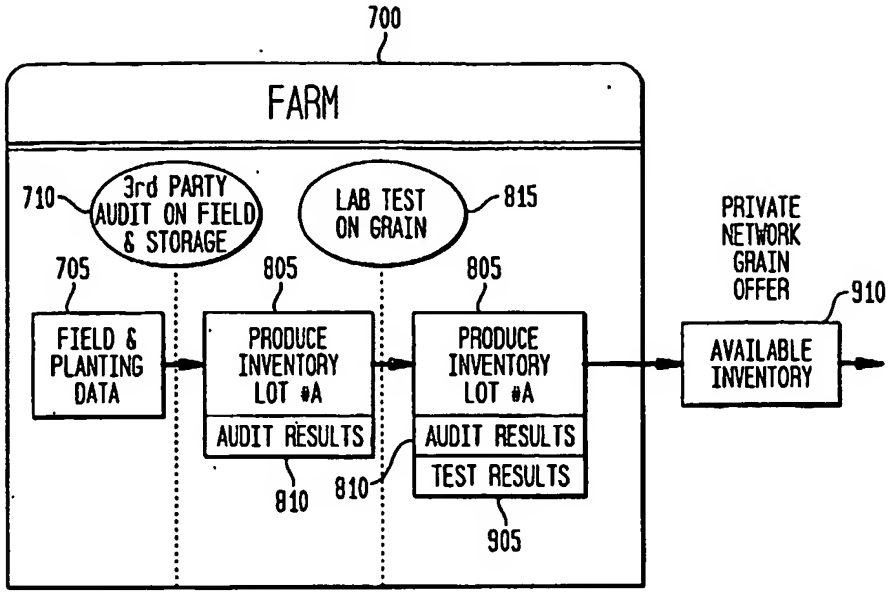

700
FARM
710
3rd PARTY AUDIT ON FIELD & STORAGE
LAB TEST ON GRAIN
815
705
805
805
FIELD & PLANTING DATA
PRODUCE INVENTORY LOT #A
AUDIT RESULTS
PRODUCE INVENTORY LOT #A
AUDIT RESULTS
TEST RESULTS
810
810
905
PRIVATE NETWORK GRAIN OFFER
910
AVAILABLE INVENTORY

FIG. 10

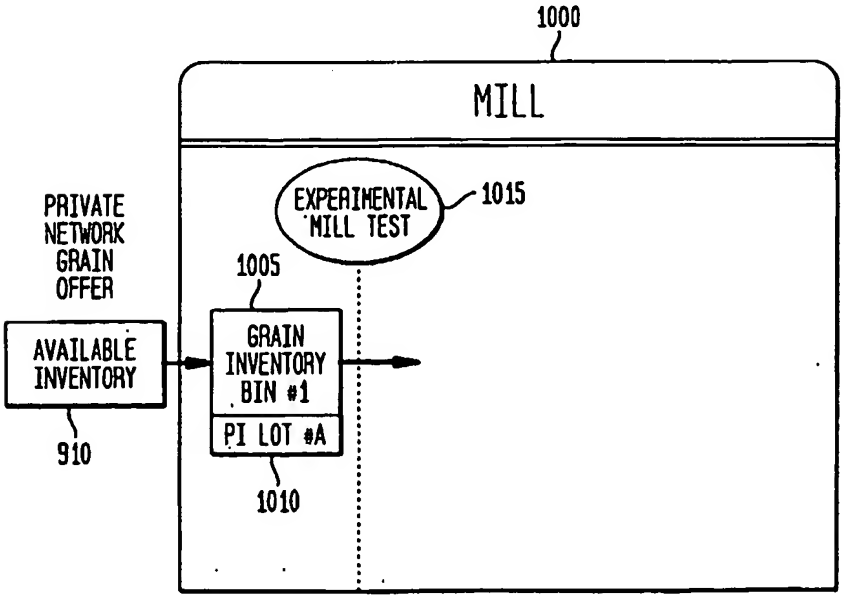

1000
MILL
PRIVATE NETWORK GRAIN OFFER
EXPERIMENTAL MILL TEST
1015
1005
AVAILABLE INVENTORY
GRAIN INVENTORY BIN #1
PI LOT #A
910
1010

FIG. 11

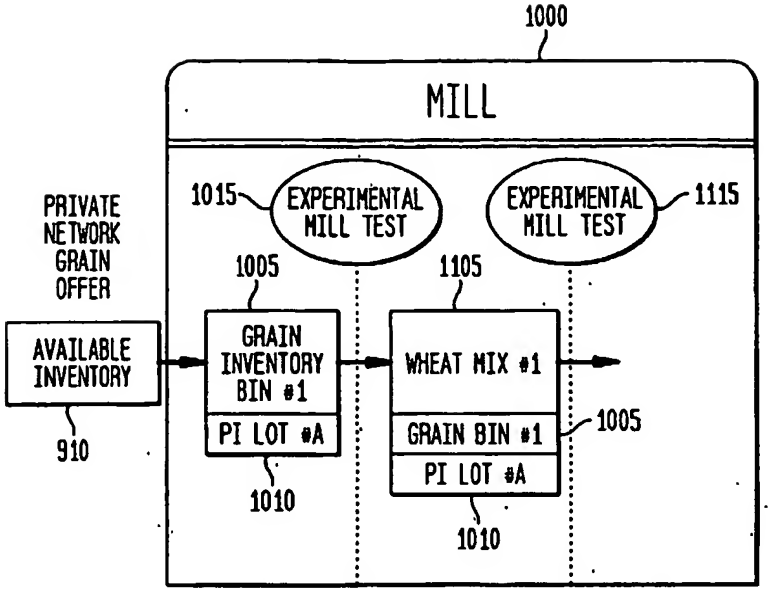

1000
MILL
PRIVATE NETWORK GRAIN OFFER
AVAILABLE INVENTORY
910
1015
EXPERIMENTAL MILL TEST
1115
EXPERIMENTAL MILL TEST
1005
GRAIN INVENTORY BIN #1
PI LOT #A
1010
1105
WHEAT MIX #1
GRAIN BIN #1
1005
PI LOT #A
1010

FIG. 12

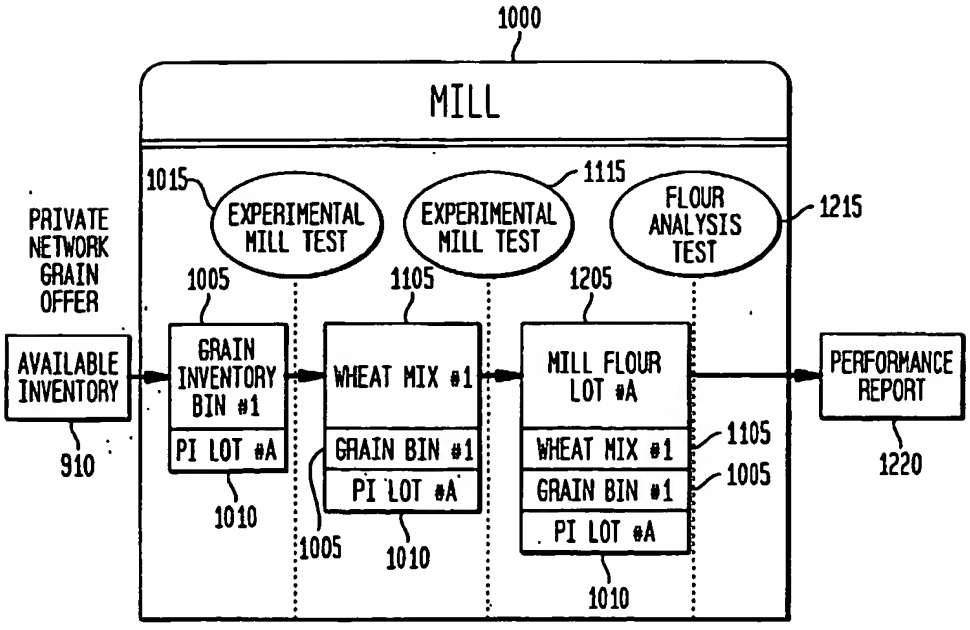

1000
MILL
PRIVATE NETWORK GRAIN OFFER
AVAILABLE INVENTORY
910
1015
EXPERIMENTAL MILL TEST
1115
EXPERIMENTAL MILL TEST
FLOUR ANALYSIS TEST
1215
1005
GRAIN INVENTORY BIN #1
PI LOT #A
1010
1105
WHEAT MIX #1
GRAIN BIN #1
PI LOT #A
1005
1010
1205
MILL FLOUR LOT #A
WHEAT MIX #1
1105
GRAIN BIN #1
1005
PI LOT #A
1010
PERFORMANCE REPORT
1220

FIG. 13

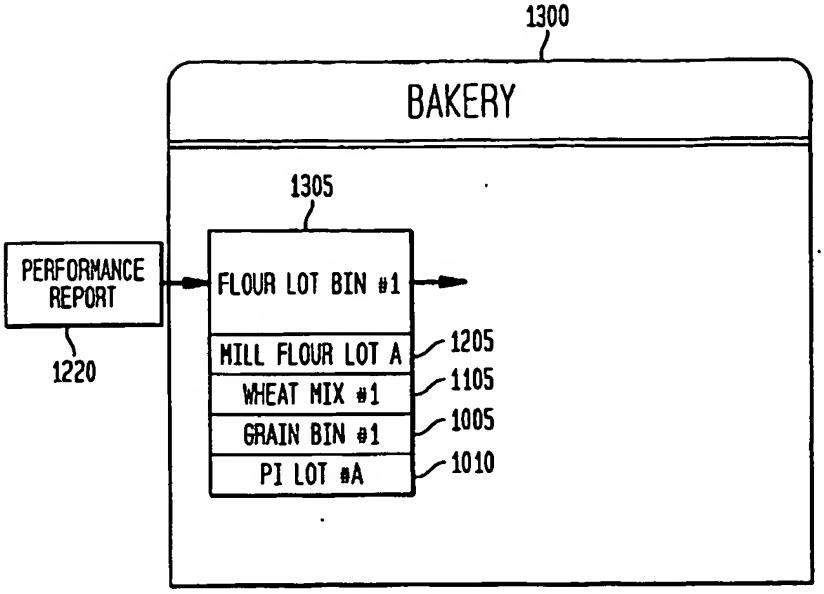

1300
BAKERY
1305
PERFORMANCE REPORT
1220
FLOUR LOT BIN #1
MILL FLOUR LOT A
WHEAT MIX #1
GRAIN BIN #1
PI LOT #A
1205
1105
1005
1010

FIG. 14

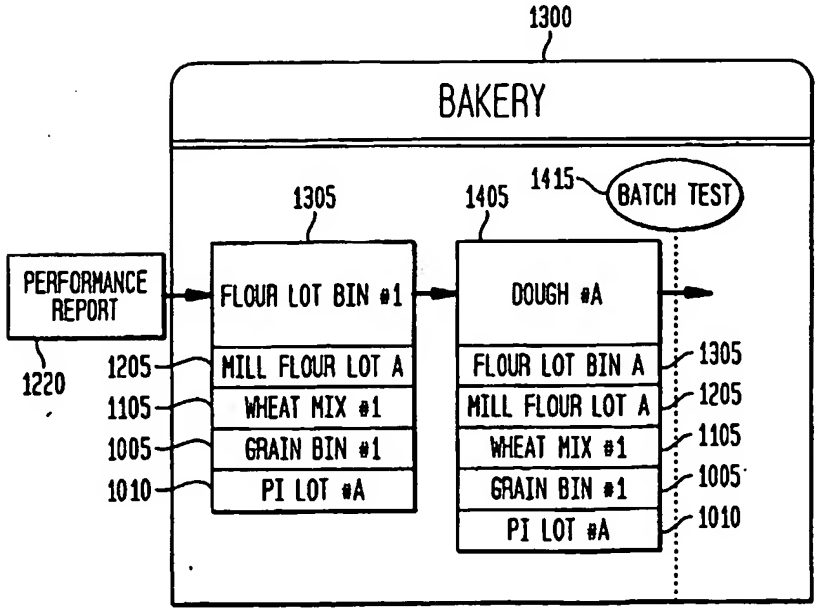

1300
BAKERY
1305
1405
1415
BATCH TEST
PERFORMANCE REPORT
1220
FLOUR LOT BIN #1
MILL FLOUR LOT A
WHEAT MIX #1
GRAIN BIN #1
PI LOT #A
1205
1105
1005
1010
DOUGH #A
FLOUR LOT BIN A
MILL FLOUR LOT A
WHEAT MIX #1
GRAIN BIN #1
PI LOT #A
1305
1205
1105
1005
1010

FIG. 15

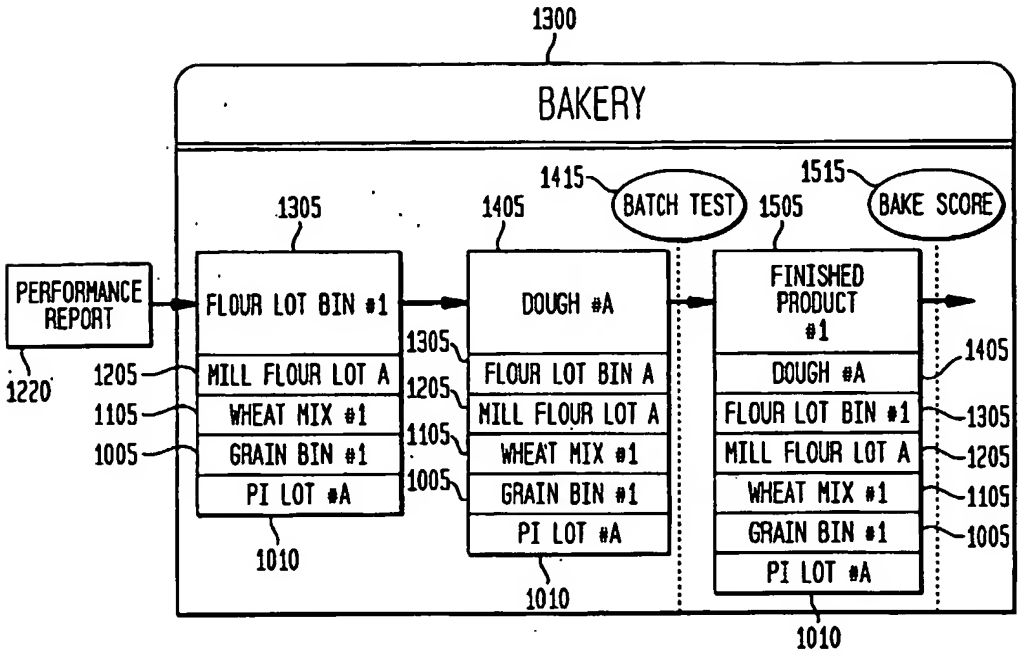
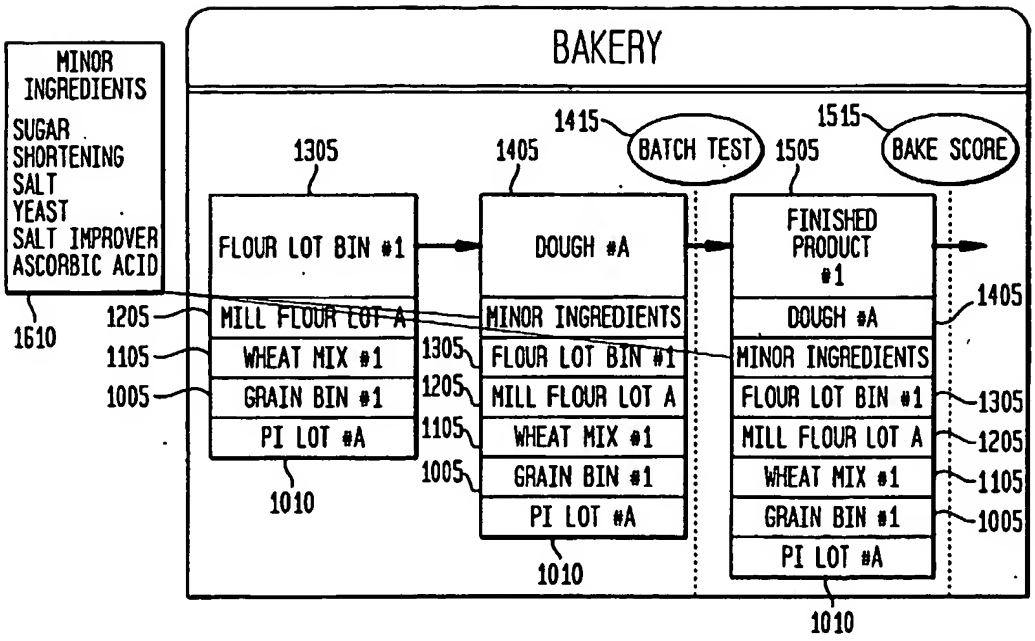

1300
BAKERY
1415
BATCH TEST
1515
BAKE SCORE
1305
1405
1505
PERFORMANCE REPORT
1220
FLOUR LOT BIN #1
1205
MILL FLOUR LOT A
1105
WHEAT MIX #1
1005
GRAIN BIN #1
PI LOT #A
1010
1305
FLOUR LOT BIN A
1205
MILL FLOUR LOT A
1105
WHEAT MIX #1
1005
GRAIN BIN #1
PI LOT #A
1010
FINISHED PRODUCT #1
1405
DOUGH #A
1305
FLOUR LOT BIN #1
1205
MILL FLOUR LOT A
1105
WHEAT MIX #1
1005
GRAIN BIN #1
PI LOT #A
1010

FIG. 16


BAKERY
MINOR INGREDIENTS
SUGAR
SHORTENING
SALT
YEAST
SALT IMPROVER
ASCORBIC ACID
1610
1205
1105
1005
1305
FLOUR LOT BIN #1
MILL FLOUR LOT A
WHEAT MIX #1
GRAIN BIN #1
PI LOT #A
1010
1415
BATCH TEST
1405
DOUGH #A
MINOR INGREDIENTS
FLOUR LOT BIN #1
MILL FLOUR LOT A
WHEAT MIX #1
GRAIN BIN #1
PI LOT #A
1010
1515
BAKE SCORE
1505
FINISHED PRODUCT #1
DOUGH #A
MINOR INGREDIENTS
FLOUR LOT BIN #1
MILL FLOUR LOT A
WHEAT MIX #1
GRAIN BIN #1
PI LOT #A
1010
1405
1305
1205
1105
1005

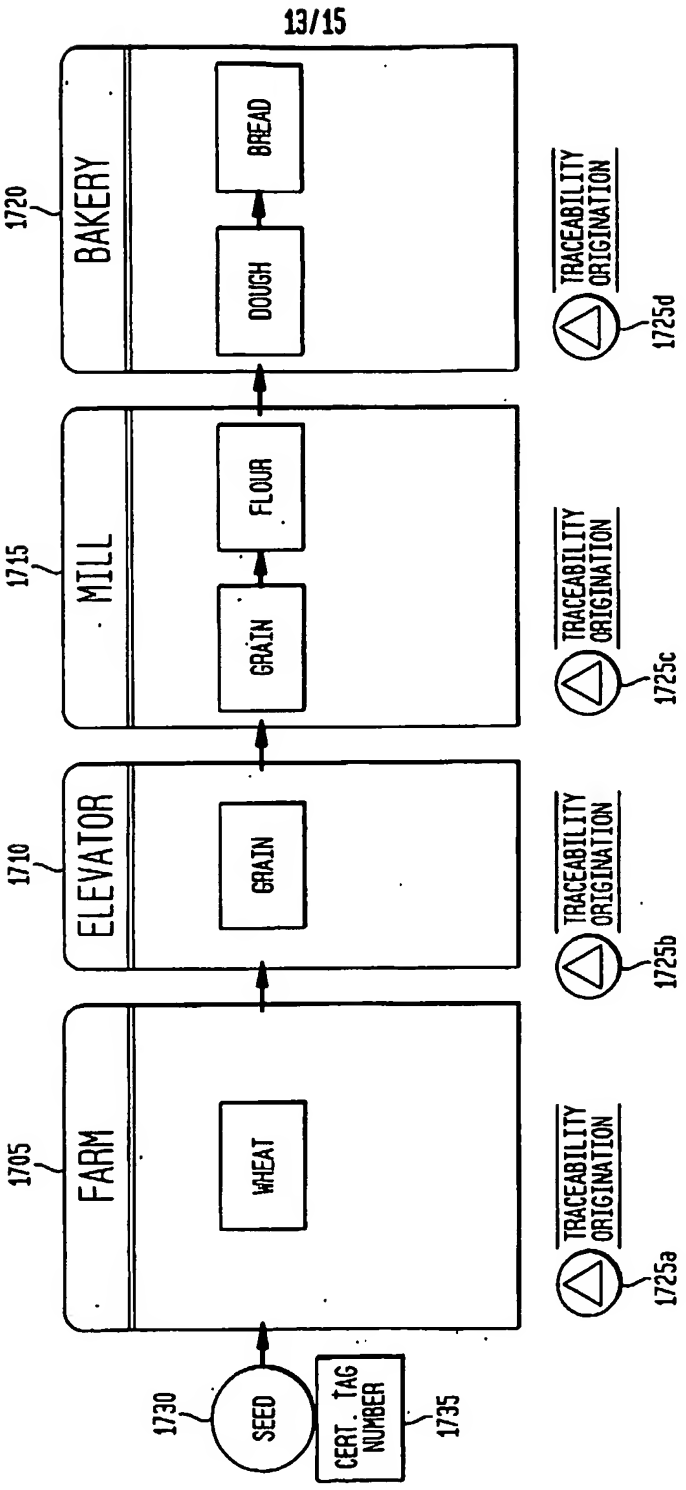

1720
BAKERY
DOUGH
BREAD
1715
MILL
GRAIN
FLOUR
1710
ELEVATOR
GRAIN
1705
FARM
WHEAT
1730
SEED
CERT. TAG NUMBER
1735
TRACEABILITY ORIGINATION
1725a
TRACEABILITY ORIGINATION
1725b
TRACEABILITY ORIGINATION
1725c
TRACEABILITY ORIGINATION
1725d
1700

FIG. 17

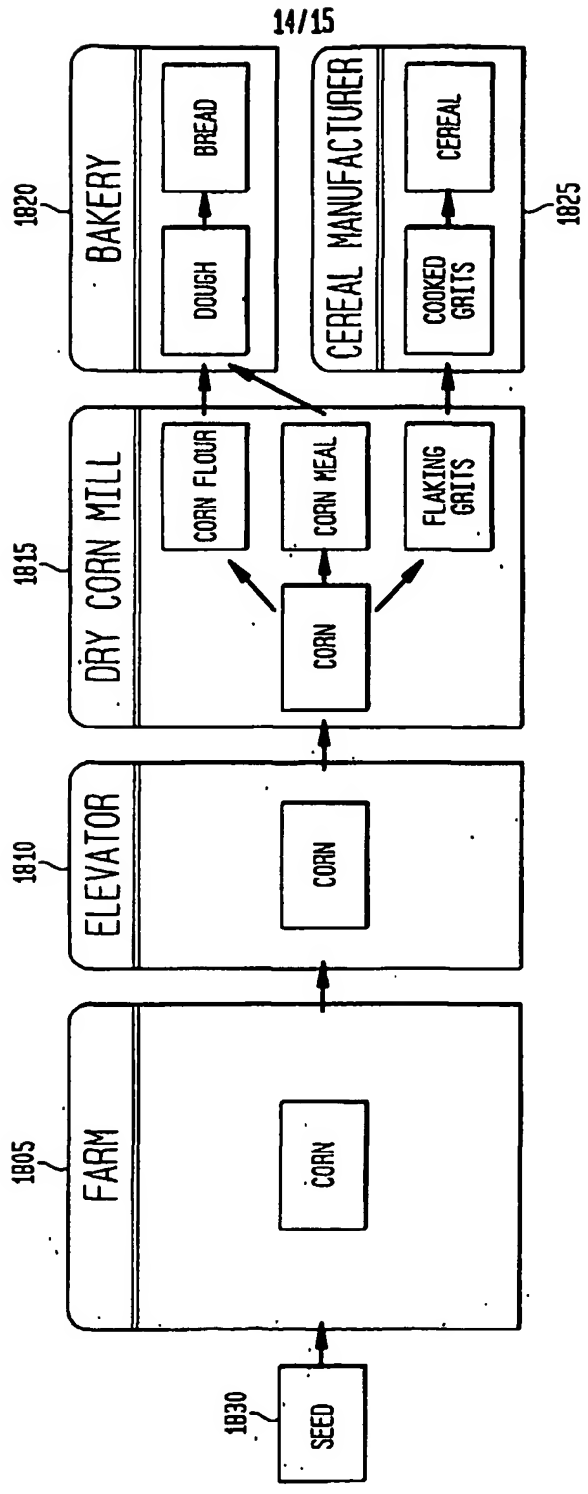
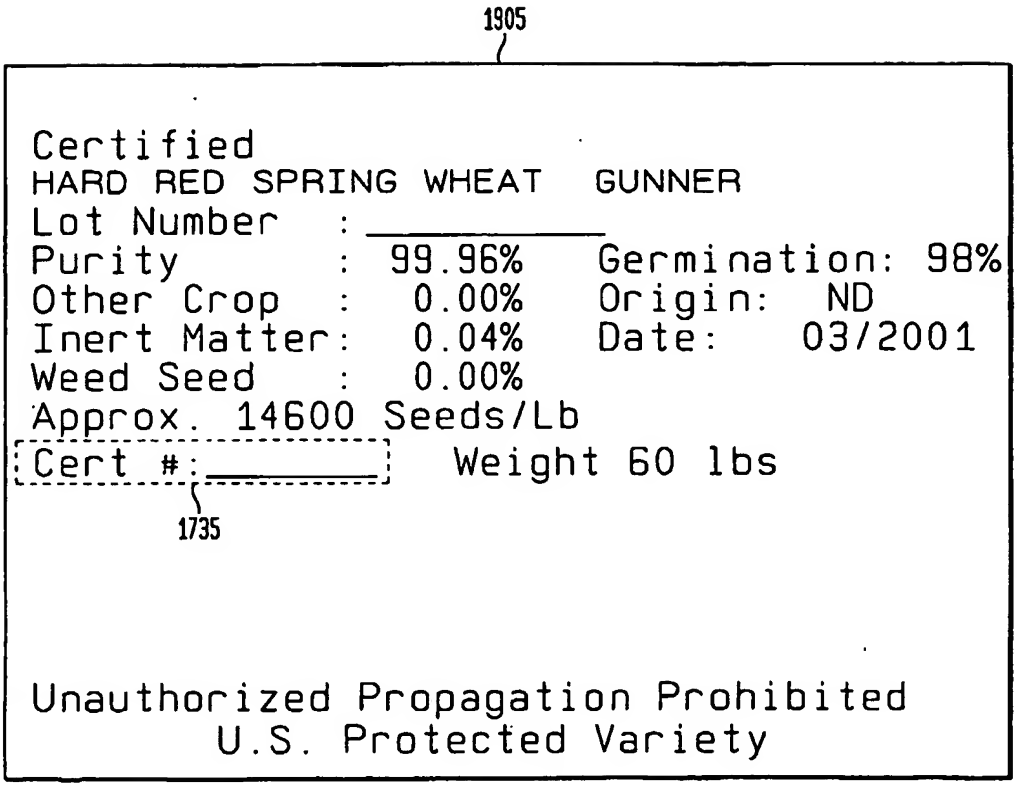

1800
1805
FARM
CORN
1810
ELEVATOR
CORN
1815
DRY CORN MILL
CORN
CORN FLOUR
CORN MEAL
FLAKING GRITS
1820
BAKERY
DOUGH
BREAD
1825
CEREAL MANUFACTURER
COOKED GRITS
CEREAL
1830
SEED

FIG. 18

FIG. 19


1905
Certified
HARD RED SPRING WHEAT GUNNER
Lot Number :
Purity : 99.96% Germination: 98%
Other Crop : 0.00% Origin: ND
Inert Matter: 0.04% Date: 03/2001
Weed Seed : 0.00%
Approx. 14600 Seeds/Lb
Cert #:
Weight 60 lbs
1735
Unauthorized Propagation Prohibited
U.S. Protected Variety